

PCTV Deluxe

USER'S GUIDE

PCTV Deluxe
User's Guide

GB September 2002

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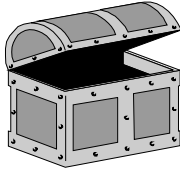
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About the Users's Guide

This User's Guide explains how to install and use the Pinnacle Systems hardware and software.

Subheadings In the margins are subheadings to help you quickly find your way through this manual.



Important text passages are marked with the “notepad” and this format.

Numbers mark step by step instructions:

1. Start Windows.

Bullets mark instructions for optional steps the order of which is not important.

- Connect the board to the camcorder.

All keyboard commands appear in this font:

setup

Menus, commands, options or buttons which the user can select are written in *italics*.



Konformitätserklärung nach ISO/IEC Guide 22 neu!!

***Declaration of conformity in accordance with
ISO/IEC Guide 22***

Nr. / No 1.01

Anbieter / Supplier : **Pinnacle Systems GmbH**
Anschrift / Address : Frankfurter Strasse 3c
38122 Braunschweig, Germany

Produkt / Product : **PCTV**

Das oben beschriebene Produkt ist konform mit: / *The product described above is in conformity with:*

Dokument-Nr. <i>Document No.</i>	Titel <i>Title</i>
EN 55022 : 1998 Class B	Grenzwerte und Messverfahren für Funkentstörungen von Einrichtungen der Informationstechnik <i>Limits and methods of measurement of radio interference characteristics of information technology equipment</i>
EN 55024 : 1999	Störfestigkeitseigenschaften für Einrichtungen der Informationstechnik - Grenzwerte und Prüfverfahren <i>Immunity characteristics for information technology equipment - limits and methods of measurement</i>
EN 61000-4-2 : 1995 + A1 : 1998	Störfestigkeit gegen Entladung statischer Elektrizität <i>Electrostatic discharge immunity test</i>
EN 61000-4-3 : 1996 + A1 : 1998	Störfestigkeit gegen hochfrequente elektromagnetische Felder <i>Radiated, radio-frequency, electromagnetic field immunity test</i>
EN 61000-4-4 : 1995	Störfestigkeit gegen schnelle transiente elektrische Störgrößen/BURST <i>Electrical fast transient/burst immunity test</i>
EN 61000-4-6 : 1996	Störfestigkeit gegen leitungsgeführte Störgrößen, induziert durch hochfrequente Felder <i>Immunity to conducted disturbances, induced by radio-frequency fields</i>
ENV 50204 : 1995	Störfestigkeit gegen hochfrequente elektromagnetische Felder von digitalen Funktelefonen <i>Radiated electromagnetic field from digital radio telephones - Immunity test</i>
EN 61000-3-2 : 1998 + A14 : 2000	Grenzwerte für Oberschwingungsströme <i>Limitations for harmonic currents</i>
EN 61000-3-3 : 1996	Grenzwerte für Spannungsschwankungen und Flicker <i>Limitations of voltage fluctuations and flicker</i>
EN 55013 : 1990 + A14:1999	Funkstöreigenschaften von Rundfunkempfängern und verwandten Geräten der Unterhaltungselektronik <i>Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment</i>
EN 55020 : 1994 + A14:1999	Störfestigkeit von Rundfunkempfängern und verwandten Geräten der Unterhaltungselektronik <i>Electromagnetic immunity of broadcast receivers and associated equipment</i>
EN 60950 : 2000	Sicherheit von Einrichtungen der Informationstechnik <i>Safety of information technology equipment</i>

Dieser Erklärung liegt zugrunde: Prüfbericht(e) des EMV-Prüflabors
This certification is based on: Test report(s) generated by EMI-test laboratory

Braunschweig, 14. November 2001 / *November 14th, 2001*

Bernd Riemann
Entwicklungsleiter Hardware
Engineering Manager Hardware

Oliver Hellmold
Finanzdirektor / *Director Finance*
(Rechtsverbindliche Unterschrift / *Legally Binding*)

FCC Compliance Statement

FOR YOUR OWN SAFETY

NOTE: Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC WARNING STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded interface cable must be used in order to comply with the emission limits.

LABEL WARNING

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Pinnacle Systems

PCTV Deluxe



Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

NOTES



Chapter 1: Overview

WHAT IS PCTV DELUXE?

PCTV Deluxe is an **external MPEG encoder box with TV functionality** which can be connected to any computer using **USB 2.0 or 1.1**.

With PCTV Deluxe, your PC is converted into a television and at the same time into a convenient video recorder.

PCTV Deluxe provides the highest video and audio quality in **MPEG-1 and/or MPEG-2 format**. Due to the efficient MPEG compression, TV programs can be recorded to and played back from the PC's hard disk at the same time via a standard USB connection.

In addition to the pre-programmed TV, VCR and timeshift functions, the **remote control** provided can also be freely programmed.

PCTV Deluxe is equipped with a **Composite** and an **S-Video input** to which video recorders, DVD players, camcorders or a video camera can be connected.

PCTV Deluxe is also equipped with a **TV tuner** which is **compatible with cable TV** and allows you to receive any TV channel offered using a common (terrestrial) TV antenna or via cable TV-net.

PCTV Deluxe includes a stereo and MTS **audio decoder**.

PCTV Deluxe offers you the following **facilities**:

Amongst other things you can

- ♦ use your **PC as a television**
- ♦ **record** video and audio sequences in **MPEG-1 and MPEG-2 format**
- ♦ play back your video recordings later thanks to the **Timeshift** feature
- ♦ **pre-program** your **video recordings**
- ♦ **connect** an **external video source** (e.g. a DVD player or a camera)
- ♦ **Burn your captured videos as VCD, SVCD or DVD** (CD-R, CD-RW, DVD-R, DVD-RW, DVD+RW, DVD+R)
- ♦ **convert your multimedia files from one format to another**, for instance from a DV AVI format to an MPEG-1 format (VideoCD).

WHAT DOES PCTV DELUXE OFFER?

WDM drivers	WDM drivers are supplied for operating the hardware under Windows Millennium Edition, Windows 2000 and Windows XP.
PCTV Vision	<p>The TV application of PCTV Deluxe offers the following functions:</p> <ul style="list-style-type: none">♦ Watching TV on your PC♦ Automatic channel search with station name recognition♦ Pre-programmed transmitter list♦ Multi-channel preview♦ Recording and playback in the digital MPEG format♦ Timeshift - delayed recording and viewing of videos, which allows functions as quick motion, live-pause and blanking out commercial breaks.♦ Digitizing individual pictures.♦ burn VCD♦ burn SVCD♦ burn DVD
PCTV WebText	<p>This application is not available in all countries and offers the following functions:</p> <ul style="list-style-type: none">♦ Teletext reception♦ Unlimited cache memory, i.e. once received, every receivable page and subpage is stored in the cache.♦ Received teletext pages can be stored as .TXT- or .HTM files.♦ PCTV WebText is displayed in your Internet browser allowing you to navigate as if you were in the Internet including it's own search engine.♦ Support for the TOP text service.
PCTV Assistant	The PCTV Assistant provides continual help during the functionality check of your computer system in association with PCTV Deluxe. All the relevant parameters for the smooth running, installation and functioning of your system are checked and stored.
Twain Driver	PCTV Deluxe offers full support of the TWAIN interface. Hereby you have the possibility to capture still images in highest resolution directly from a connected video source into an image processing program.
TRex	TRex is a program, which enables you to convert your multimedia files from one format to another, for instance from a DV AVI format to an MPEG-1 format (VideoCD).



Chapter 2: Before you start

SYSTEM REQUIREMENTS

In order to install and use PCTV Deluxe successfully, your system must satisfy the following requirements:

Hardware

- ♦ *Computer:*
As a minimum, Pentium® III or Celeron® PC running at 700 MHz (recommended 1 GHz or higher) or comparable AMD processor with CD-ROM drive.
- ♦ *Memory:*
At least 128 MBytes memory (recommended 256 MBytes).
For Windows 2000 and Windows XP at least 256 MBytes.
- ♦ *Harddisk:*
Enhanced-IDE harddisk with at least 5 GB free disk space (second video hard disk running in DMA mode recommended).
- ♦ *Graphics board:*
DirectX 8.1 compatible graphics board (AGP graphics board with MPEG-1 and MPEG-2 decoding support recommended) with at least 8 bits color depth (256 colors).
DirectX Overlay surface capability.

DirectDraw support:

Before you start to work with the applications, a graphics board with a complete DirectX 8.1 must be installed.

The installation program checks to see if DirectDraw has been installed. If this is not the case, it will install DirectX 8.1 automatically.

- ♦ *Sound board:*
DirectX 8.1 compatible sound board.
- ♦ *DVD burner (for DVD Authoring)*



Software

- ♦ Windows Millennium Edition, Windows 2000 (with Service Pack 2 installed) or Windows XP.
- ♦ If you want to use PCTV WebText (not available in all countries), the Internet Explorer (4.0 or 5.X) has to be installed on your computer. The Internet Explorer is contained on the supplied CD-ROM and can be installed using the install program.

Antenna connections

- ♦ Connect the PCTV Deluxe *TV antenna input* to the household antenna (coaxial connection) or to a cable connection.



You will require the appropriate cable to make the antenna connections. Please note that the quality of the cable has a considerable effect on the quality of the reception.



PCTV Deluxe – Rear connections

Video equipment

- ♦ *S-Video and Composite Video inputs:*

You can connect any video device that provides an S-Video signal or a Composite video signal in PAL, NTSC or SECAM to the PCTV Deluxe video inputs, regardless of the video system used (e.g. VHS, S-VHS, Hi8, Video 8), e.g. video recorders, camcorders, video cameras or DVD player.



Please note that not all video standards (PAL, NTSC or SECAM) are available for all product variants.



If your video source has an S-Video output, for reasons of quality make your connection to this and not to the composite video output.



PCTV Deluxe – Front connections

PACKAGE CONTENTS

Before beginning the installation of your device, please check to make sure your package is complete¹:



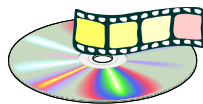
PCTV Deluxe



Power supply with
separate power cable
(no illustration)



USB-cable



CD-ROM containing
drivers, applications, online
documentation



Remote
with batteries



Quick Installation Guide

If any parts are missing, please contact your dealer or retailer. You will find the complete software and documentation on CD-ROM. Diskettes are not included in the package contents.

Software The PCTV Deluxe package contents include the following software:

- ♦ **WDM drivers** for Windows Millenium Edition, Windows 2000 and Windows XP.

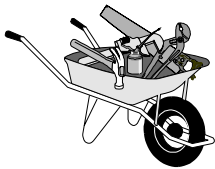


The operation systems **Windows 95**, **Windows 98** and **Windows NT 4** are not supported by PCTV Deluxe!

- ♦ The **PCTV Assistant** helps you to check the functionality our your computer system together with PCTV Deluxe. All relevant parameters for the correct installation and function of your system are checked and saved.

¹ Depending on the delivery scope, the actual package contents may be different from the package contents listed in the manual.

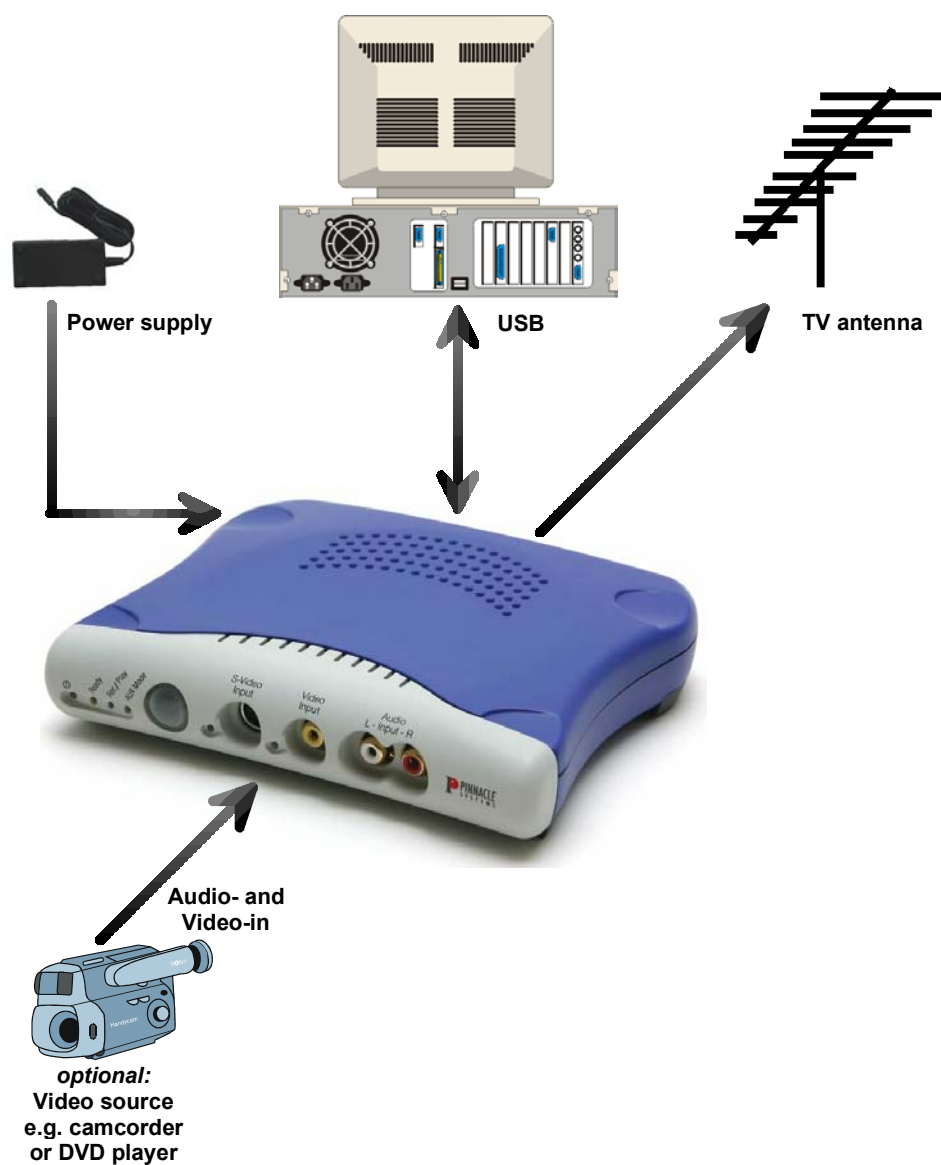
- ♦ **PCTV Vision** is an application that allows you to use your PC monitor as TV and VCR.
- ♦ With the **PCTV WebText** application (not available in all countries) you can make use of the teletext function offered by many TV stations and save and print teletext pages.
- ♦ PCTV Deluxe offers **full support of the TWAIN interface**. Hereby you have the possibility to capture still images in highest resolution directly from a connected video source into an image processing program.
- ♦ **TRex** is a program, which enables you to convert your multimedia files from one format to another, for instance from a DV AVI format to an MPEG-1 format (VideoCD).



Chapter 3: Install PCTV Deluxe

This section explains you how to install the PCTV Deluxe-hardware and -software. During the installation, the *PCTV Deluxe* program group will be created and the Windows drivers, the tools, and the applications will be copied into this group.

The following illustration shows a sample configuration:



SPECIFIC CHARACTERISTICS OF WINDOWS 2000 AND WINDOWS XP

During the installation of PCTV Deluxe under Windows 2000/XP, please pay attention to the following specific characteristics:

For the installation you need **administrator rights**.

In order to work with the applications you must be a member of the group **Power Users** or higher.

INSTALLATION STEPS

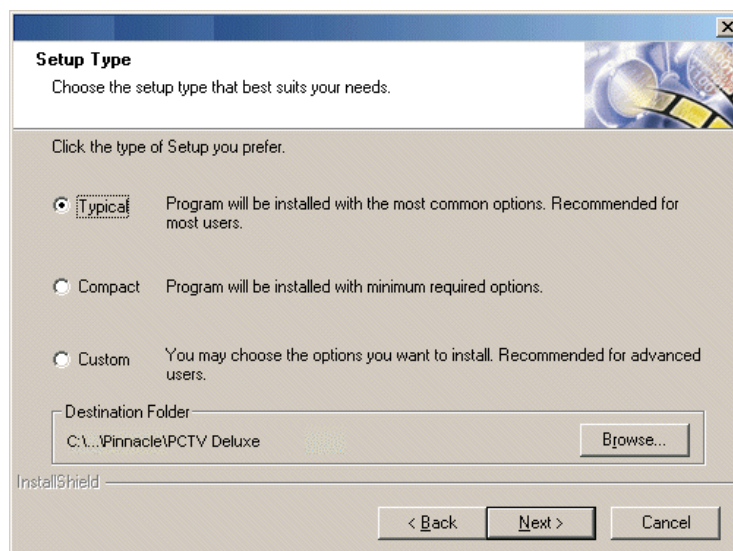
1. Switch on your computer and start Windows.
2. Insert the installation CD-ROM into the CD-ROM drive of your computer.

Now, the setup program will start automatically or you start *autorun.exe* from your CD-ROM.

The installation program is starting with the following dialog box:



3. Choose Setup language, click *OK*.
4. Click *Next*.
5. Select a Setup type.



6. Change the hard disk / directory.

If you wish to copy the files to a different hard disk / directory, click on the *Browse...* button and define the hard disk / the directory.

7. Click *Next*.

8. Select a program folder, click *Next*.

9. Select the components, click *Next*.

If you have chosen *Custom* as setup type, in the following dialog box you can specifically choose the components that you want to install. After having determined the components, click *Next*.



This installation step is not required, if you have chosen *Typical* or *Compact* as setup type.

10. Follow the on-screen instructions.

Now, please follow the installation instructions displayed on the screen.

THE PCTV ASSISTANT

The PCTV Assistant helps you to check the functionality of your computer system together with PCTV Deluxe.

All relevant parameters for the perfect installation and function of your system are checked and saved.

If you encounter problems later when using PCTV Deluxe, you can use this test application to localize the problems very quickly and find solutions for them.

The program is subdivided into separate sections. To test the entire functionality of your system, all available tests should be carried out in the prescribed order. The tests can also be run later to test individual functions.

The Assistant will be started automatically after restarting the system or after installing the software.

You can start the PCTV Assistant at other times using the *PCTV Deluxe* program group located in the *Tools* folder of the *Start* menu.



When the PCTV Assistant has been started you can begin with the tests.

After having completed the individual tests, proceed with the next test by clicking *Continue*.

If you click the button *Details* further information on the course of the tests and on the corresponding failure messages will be displayed.

The display *Test Progress* is showing you, which part of the tests is already finished.

All functional tests can be aborted by clicking *Exit*.

Checking the Software

The first test of the PCTV Assistant is checking whether all required drivers have been installed correctly. If this is not the case, a corresponding failure message will be displayed.

If the test has been finished successfully, you will also get a corresponding message and you can proceed with the next test.

DirectX-Installation

For a perfect function of your system, DirectX has to be installed in the version 8.1 (minimum) or higher. If the PCTV Assistant determines that this is not the case, you can carry out this installation supplementary from the enclosed CD-ROM.

DirectDraw Support

This test will check the DirectDraw compatibility of your graphics board. If your board is not compatible a failure message will be displayed and you can take corresponding measures.

Overlay-Test

At this point a test will check whether your graphics board in the current mode (resolution, color depth, image refresh rate) is supporting a TV full screen. If this is not the case, the possibilities of TV image display of PCTV Deluxe cannot be used completely. ***Actually, the functionality is not restricted by this.***

PCTV Deluxe Resource Test

The last test of the PCTV Assistant will check the functionality of the PCTV Deluxe Box.

Exit PCTV Assistant

Once you have tested all functions successfully, click on the button *Exit*.

If you have problems...



All results produced by the Assistant are saved in the text file ASSISTANT.TXT, which is created in the PCTV Deluxe/ASSI directory. If you encounter unanticipated problems when installing PCTV Deluxe, please forward a print out of this text file to the Support at Pinnacle Systems.

After you have finished the installation / configuration of PCTV Deluxe, consider visiting the Pinnacle Web site at <http://www.pinnaclesys.com> to look for the latest software updates.

CONNECTING OPTIONAL EQUIPMENT

Depending upon your individual requirements you can now connect other equipment to the PCTV Deluxe-Box.

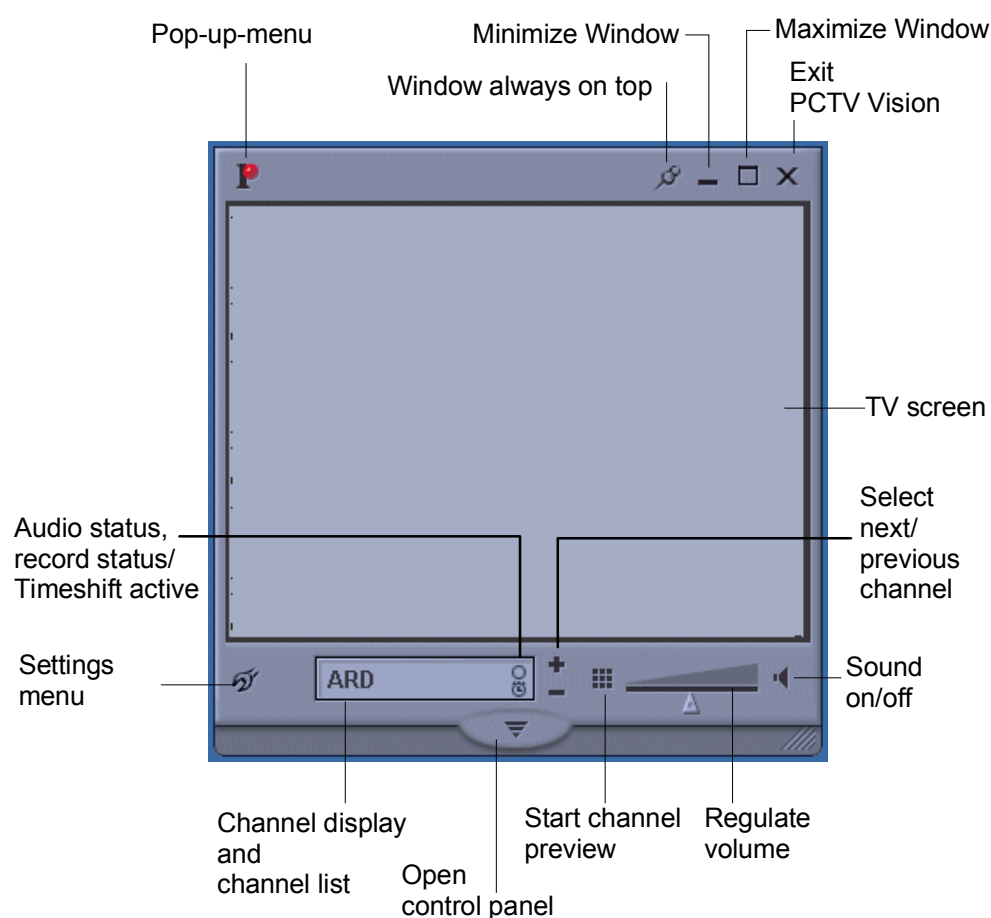
Connecting audio inputs and video input

Connect your video source (e.g. camcorder, videorecorder, DVD player) to the PCTV Deluxe audio inputs and the appropriate video input (Composite or S-Video).

Chapter 4: PCTV Vision







THE MAIN WINDOW OF PCTV VISION



UPPER WINDOW AREA

Window settings


At the upper right edge of the PCTV Vision window there are four buttons for making the following settings:

Always keep windows at top , minimize windows , maximize windows  and exit PCTV Vision .

Show and hide frame and buttons

By double-clicking with the left mouse button on the PCTV Vision window, you can show and hide the frame and buttons of the window. A repeated double click displays the frame and buttons again.

Pop-up menu

By clicking the  button or *clicking the right mouse* button on the PCTV Vision window, you go to the pop-up menu.

Here you have access to more settings.

Function keys or key combinations have been defined for some menu items. You will find these on the right hand edge of the menu in each case.





Show frame and buttons

By selecting these options, frame and buttons can be hidden or shown again.

Always on top

By activating this button, the PCTV Vision window is kept on top.

Gallery	With this option you can call up the gallery where your recorded videos, audio files and grabbed single frames (snapshots) are listed.
Scheduler	Select this option to plan and program your video recordings in the Scheduler.
Size	<p>Select here the size of the PCTV Vision window.</p> <p>You can select between various set sizes and a full screen.</p> <p>You can, however, customize the size by holding down the mouse button on a corner and dragging the PCTV Vision window to make it bigger or smaller. The page ratio remains the same (see “Aspect”).</p>
Aspect	Select here between the common picture format 4:3, the format 16:9 of a movie theater screen, and a format you can size yourself.
Zoom In	<p>This zooms in centrally on the TV picture. This can be repeated several times. The zoom window can be moved using the arrow keys.</p> <p>Furthermore, you can zoom in on any rectangular area of the TV picture. To do this, press and hold the shift key and the left mouse button and drag the rectangle to the required size.</p>
Stop Zoom mode	The TV picture is returned to its initial size of 100%.
Enable Cropping	Zooms in on the TV picture with a defined 1%. This suppresses possible interference from some stations on the top and bottom edge of the picture.
Mode	<p>Select here whether the <i>Record</i>, <i>Play</i> and <i>Timeshift</i> window should be displayed or not.</p> <p>You can also make this selection by clicking the  button in the PCTV Vision main window.</p>
Settings	<p>After selecting this option you advance to the Settings menu. (see also the section “Settings Menu”).</p> <p>You can also call up this menu by clicking the  key.</p>
Show tool tips	With this option you can show or hide the tool tips.
Help	With this option you can call up the online help.
Exit	With this option you can exit the PCTV Vision application.

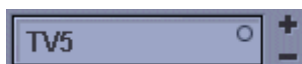
LOWER WINDOW AREA

In the lower area of the main window you can


- ♦ call up the Settings menu
- ♦ select a television channel and call up the channel list
- ♦ select a television channel and call up the channel/group list
- ♦ switch to Composite or S-VHS input via the channel list
- ♦ change to your personalized group of transmitters
- ♦ run a preview on all channels
- ♦ regulate the volume or turn the sound on or off
- ♦ open the control panel for Record, Play and Timeshift.

Channel display and channel list

Channel display



You can obtain the following information from the station display:

- ♦ The currently selected **station** or **video input (composite or S-Video)** is displayed.
- ♦ You can **choose** the next or the previous **station** from the station list by clicking the  buttons.
- ♦ The **current audio status** is displayed to the right of the station name.

 Mono


 Stereo



 or  Channel 1 or Channel 2

 Channel 1 and Channel 2

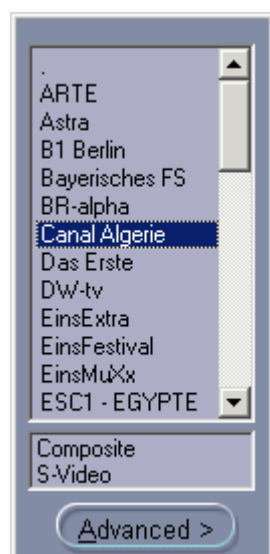
- ♦ If you have **programmed recordings**, an indicator appears below the audio status symbol:

 grey: timer has been programmed but is not yet running

 red: programmed recording is running at the moment

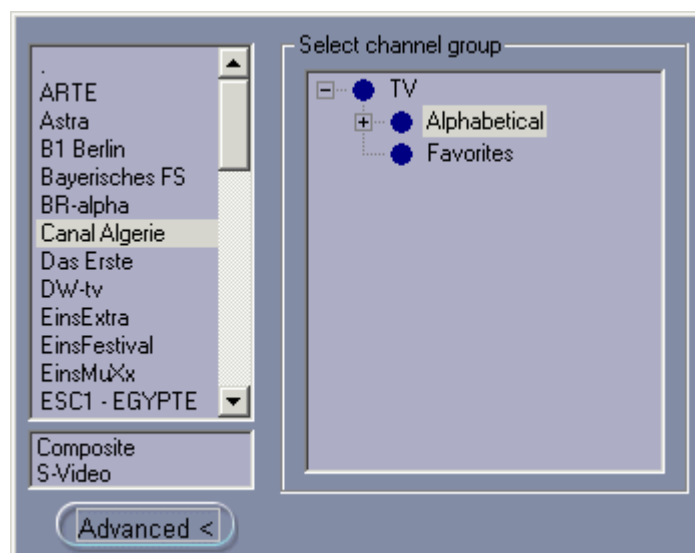
- ♦  this indicator shows that a **manually started recording is running** at the moment
- ♦  this indicator (green) shows that the **Timeshift function** is currently activated

Channel list By clicking on the Channel display, the channel list appears:




Here you can directly select the desired program via mouse click or arrow key. Instead of using the TV tuner, you can also switch to S-VHS or Composite input.

Channel list Advanced By clicking on the *Advanced* button, all the channel groups you personally specified will appear (see the “Channel settings” section). You can select a channel group, and only channels belonging to that group will be displayed in the channel list.



By clicking in the PCTV Vision window or selecting a channel, the list window will close.

Channel matrix

By clicking on the  button you will see a preview of all the available TV channels of the current channel category in the same order they have in the channel list. Each channel name is also displayed.

You can set the number of channels that are to be displayed on the *Special* tab in the setup menu.





The preview is silent to avoid disturbing noises.

Select channel By clicking on a channel, the preview ends and the channel is selected.


Cancel channel matrix You can cancel the preview by using [Escape]. The previously selected channel is displayed again.

Volume

Sound on / off By clicking the  button you can turn the sound on and off.

Regulate volume To regulate the volume, you can move the slider  with depressed left mouse key.

THE CONTROL PANEL FOR RECORD, PLAY AND TIMESHIFT

After clicking the  button or by choosing the *Mode* option in the pop-up menu, the control panel for Record, Play and Timeshift will open.

Here you will find all the functions for recording and playing back videos and will be able to see a list of your recordings in the gallery.

You can also activate and deactivate the Timeshift function.



Time- and position display



With a mouse click on the time- and position display during a **running playback**, you can switch between the **display of the running time** (playback time up to now) and the **display of the remaining time** (remaining playback time).

The different functional states

PCTV Vision offers four different functional states (also called “function modes”).

In addition to the respective symbols shown in the control panel, you can recognize the currently prioritized state by the color of the background of the time and position display.

Here are the possible **functional states** and the associated background colors:

Watch TV only (black)	The selected station/video input is being displayed in the viewing window.
Record (red)	A manually programmed or Timeshift recording is running.
Play (blue)	A video file is being played.
Timeshift (green)	The Timeshift function is active.

Example:

A **manual recording** is running and the time and position display has a red background (functional state: Record).

If a **file that has now already been recorded is played back**, the background color of the time and position display changes to **blue** (functional status: Play).

If the **replay is stopped**, the **functional status changes back from Play to Record** and with it the **background color from blue to red**.

Combining the functional states

It is fundamentally possible to combine the four functional states, i.e. to use several functions at once.

The following matrix gives an overview of the possibilities:

Priority functional state	Background color	Possible actions		
		<i>Record</i>	<i>Play</i>	<i>Timeshift</i>
<i>View TV only</i>	<i>black</i>	yes	yes	yes
<i>Record</i>	<i>red</i>	./.	yes	no
<i>Play</i>	<i>blue</i>	no	./.	no
<i>Timeshift</i>	<i>green</i>	yes	yes	./.

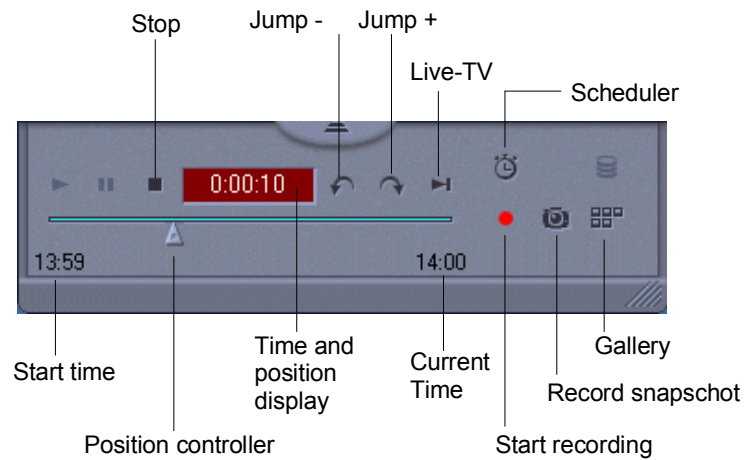
In the following example, you can see which actions can be active **as a maximum at the same time**:

- You start PCTV Vision and watch **TV only**:
The time and position display is **black**.
- You activate the **Timeshift function**:
The time and position display is **green**.
- You start a **manual recording**:
The time and position display is **red**.
- You start to **replay** a MPEG file:
The time and position display is **blue**.

Functional state: Timeshift

You will find further information on the Timeshift function in Chapter 5 of this manual.

Functional state: Record (manual and programmed)



The controls described below are active in the Record state. This applies both to recordings that have been started manually and those that have been programmed.

Stop Stops the current recording. You return to the mode that was active before the recording was commenced.



Jump - / Jump + Jump backwards/forwards within the recorded file.



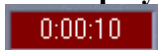
Scheduler Opens the Record Assistant, which you can use to plan and program your recordings.



Position controller Use the controller in order to get to a particular position within the recorded file.



Time and position display The background of the time and position display is red during the recording.



Live-TV The viewing window shows live TV, the recording continues to run.



Start / stop recording Starts a manual recording and lights up red while the recording is running / stops a running recording procedure.



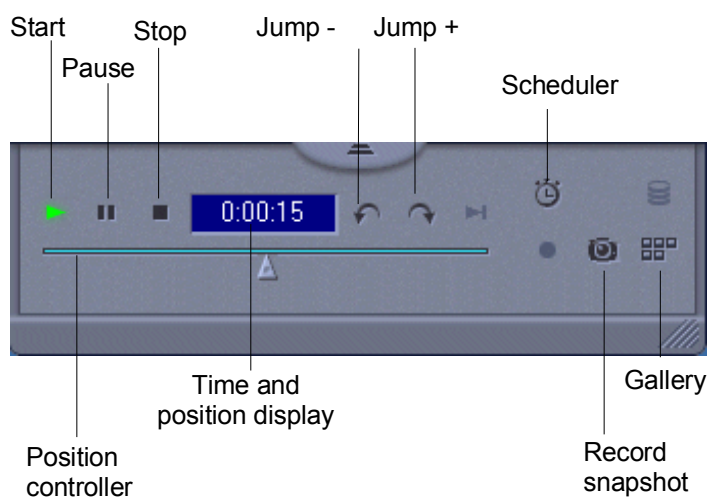
Record snapshot Initiates a snapshot of the picture currently being displayed.



Gallery Opens/closes the gallery.



Functional state: Play





With a mouse click on the time- and position display during a **running playback**, you can switch between the **display of the running time** (playback time up to now) and the **display of the remaining time** (remaining playback time).



The controls described below are active in the Play state.


Start Restarts a playback that has been paused.




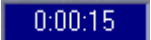
Pause Pauses the playback.



Stop Stops the current playback. You return to the mode that was active before the recording was commenced.



**Jump - /
Jump +** Jump backwards/forwards within the file currently being played back.
 / 

Scheduler Opens the Record Assistant, which you can use to plan and program your recordings.



Position controller Use the controller in order to get to a particular position within the file currently being played back.


Time and position display The background of the time and position display is blue during playback.


Record snapshot Initiates a snapshot of the picture currently being displayed.


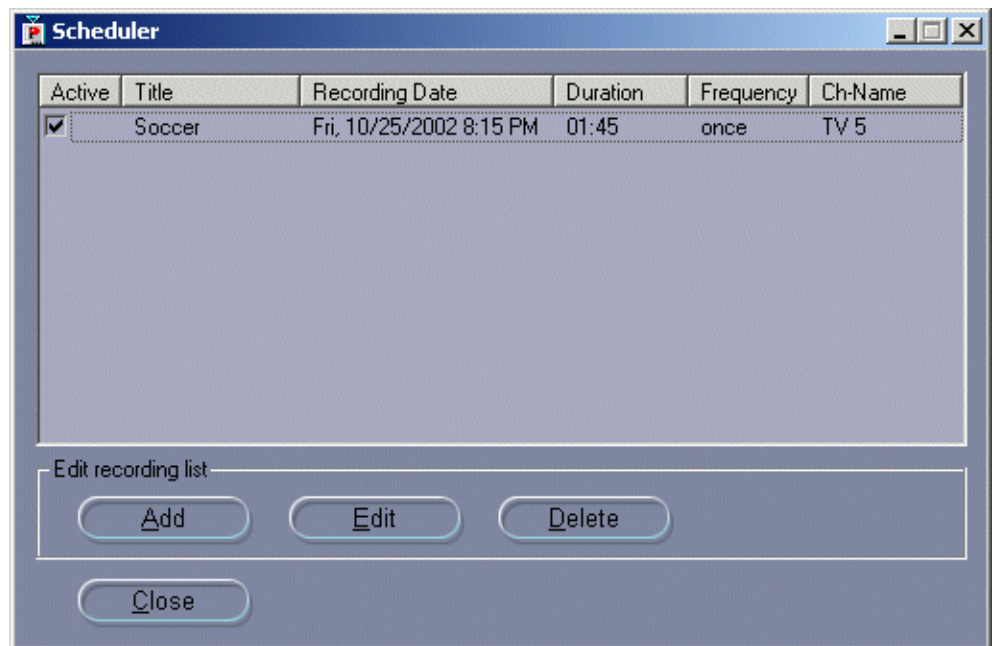
Gallery Opens/closes the gallery.


SCHEDULER

After clicking the  button, the Scheduler settings dialog appears, where you can plan and program your video recordings.

Scheduler settings dialog

Here you can plan all the programs you want to record.



List The selected list gives you the following information about the programs you want to record:

- ♦ *Active* - here you can see whether the individual recording tasks are activated or not.
- ♦ *Title*
- ♦ *Recording Date*
- ♦ *Duration*
- ♦ *Frequency*, i.e., how often the recording is repeated (e.g., once, daily or weekly).
- ♦ *Channel Name*

Edit recording list In the lower area of the window you can make changes to the list. Use the buttons

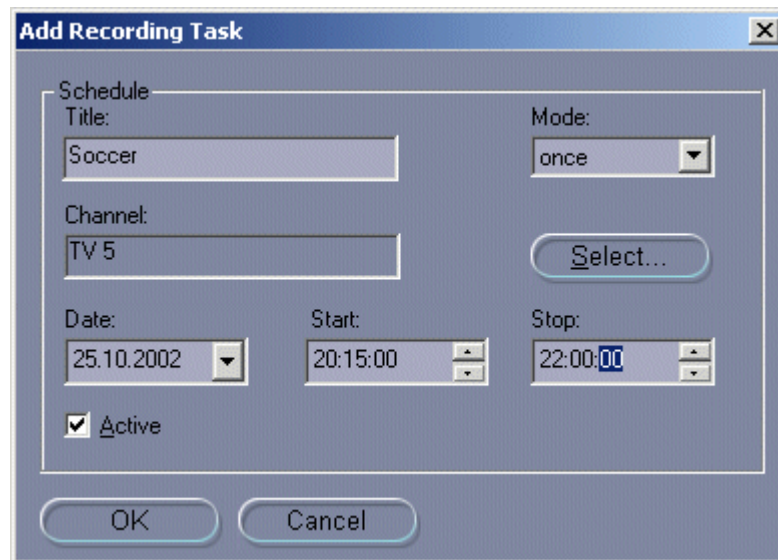
- ♦ *Add*
- ♦ *Edit* and
- ♦ *Delete*

After clicking the *Edit* button you can change your existing entries.

By clicking the *Delete* button you can delete the highlighted entries.

By clicking the *Add* button you come to the programming window, where you can program a desired recording.

Add Recording Task



Schedule Enter here the title, channel, recording date with start and stop time, and the frequency (e.g., once, daily or weekly).

By using the *Select...* button you can select another channel.

When you have finished all the settings, confirm with *OK*.


The recording is now programmed and will take place according to the information you have entered.

The check box *Active* allows you to deactivate the corresponding recording task temporarily, without losing the entered data, and to activate it again later on. In the scheduler list you can see the state of the individual recording tasks.



Please ensure that the PCTV Vision application is active at the time of making the recording and that no other recordings are running. Otherwise the recording that is required now cannot be made.

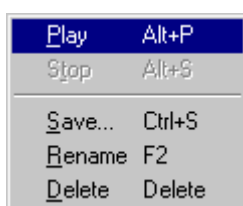
GALLERY

By clicking the  button you come to the gallery, where your recorded videos, audio files and grabbed single frames are listed.

Video gallery

The *Videos* tab contains information about all the videos you have recorded. Under *View*, you can select the information you want to see.

Context menu Please note, that you can carry out several actions by clicking with the right mouse button on the corresponding file. The following context menu is displayed:



- ♦ *Play*: Start video playback
- ♦ *Stop*: Stop video playback
- ♦ *Save...*: Save the file in the desired directory
- ♦ *Rename* the file
- ♦ *Delete* the file

View Thumbnails

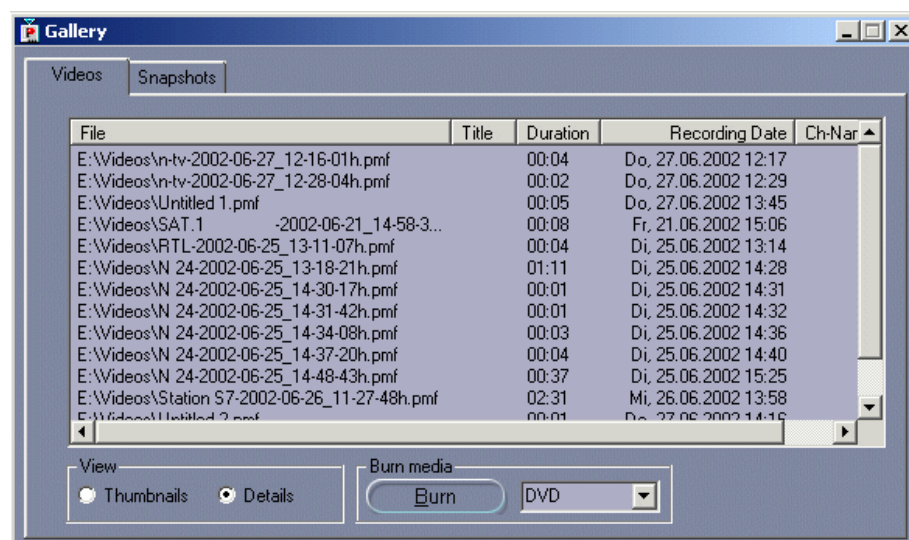
This view shows the first picture of each recorded video.



Burn/VCD/SVCD/DVD For details concerning these buttons, please refer to the section “The VCD, SVCD and DVD burning functions”.

View Details In this view, you see detailed information about the recorded videos:

- ♦ *File*: Name and storage location of the video
- ♦ *Title* of the video
- ♦ *Duration* of the video
- ♦ *Recording Date*
- ♦ *Channel Name*.



Burn/VCD/SVCD/DVD For details concerning these buttons, please refer to the section “The VCD, SVCD and DVD burning functions”.

Start playback If you want to play one of the files, you have three options:

- ♦ Double-click on the corresponding file, or
- ♦ Click with the right mouse button on the corresponding file and select the *Play* option from the pop-up menu.
- ♦ Drag & Drop – drag the file into the Vision window keeping the left mouse button pressed.

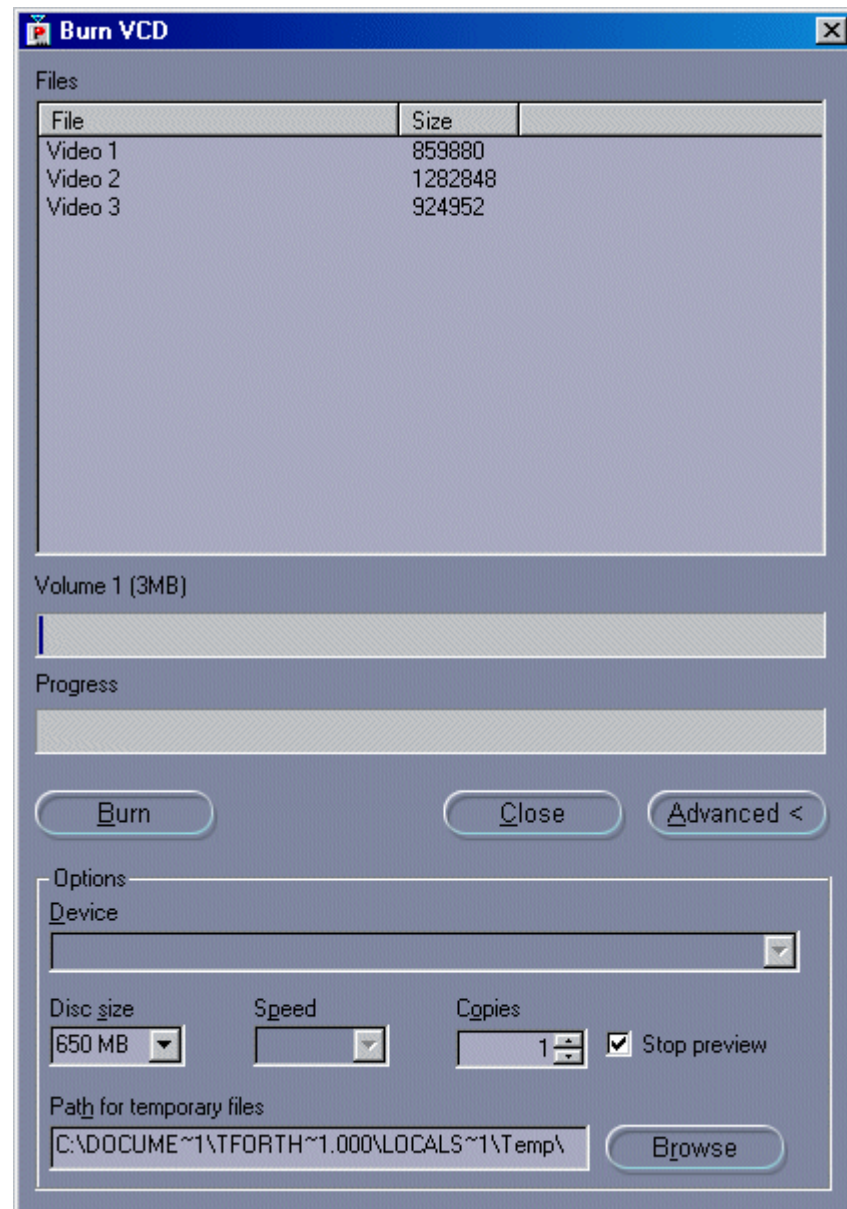
Stop playback If you want to stop the playback, you also have three options:

- ♦ Press the Esc key, or
- ♦ Click with the right mouse button on the corresponding file and select the *Stop* option from the pop-up menu.
- ♦ Click on the Stop button in the open control panel.

THE VCD, SVCD AND DVD BURNING FUNCTIONS

By using the buttons *Burn / VCD*, *SVCD* or *DVD* in the Video Gallery you can open the following dialog. It contains a listbox as well as several buttons and options for the burning process settings.

You can also use the context menu in the Video gallery to open this dialog.



Once the dialog is open, only files captured with appropriate capture format will be selectable in the gallery (Thumbnails or Details view). All other files are grayed out.

You can select/de-select the files via the left mouse button.

If you want to select all files, use CTRL-A, or the SHIFT- or CTRL-key in combination with the left mouse button.

Selected files can be transferred from the gallery into the listbox by Drag&Drop.

Files (Listbox) The listbox displays a filename for each file and the further details *Size, file duration* and *capture format*.
The files appear in the order in which they have been transferred from the gallery.

Select file(s)

You can select/de-select the files via the left mouse button.
If you want to select all files, use CTRL-A, or the SHIFT- or CTRL-key in combination with the left mouse button.

Rearrange files

You can rearrange the order of the files in the listbox by Drag&Drop.


Delete listbox entry

A listbox entry can be deleted by selecting it via the left mouse button and pressing the DEL key.

Volume This bar displays the total size of all files in the listbox in MB units. Each time a new file is transferred into the listbox, the bar will be adjusted to the corresponding file size.
The maximum marker shows the maximum size of the chosen medium.

Progress The *Progress* bar displays the status of a running burn process.

Burn By clicking this button, the burning process is started.

Close The dialog and/or the burning process can be closed by using this button or by using the  button in the upper right corner.

Advanced This button opens or closes the lower part of the dialog where you can choose between several *Options* for the burning process settings:

Device

If you have several burning devices installed in your system, you can choose from this list.

Disc size

Shows the capacity of the medium disc that you have inserted into the burning device.

Speed

Here, you can select the burning speed for the planned process.

Copies

Enter the number of copies you want to produce.

Stop preview

This checkbox is enabled by default as the burning process is carried out more quickly without simultaneous preview.

If you disable the checkbox, you can preview the selected video source during the burning process, but this procedure takes more time.

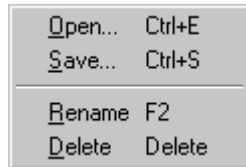
Path for temporary files

Here, you can specify the directory for saving intermediate files that are produced during the burning process. If necessary, use the *Browse* button to specify the correct path on your system.

Snapshots gallery

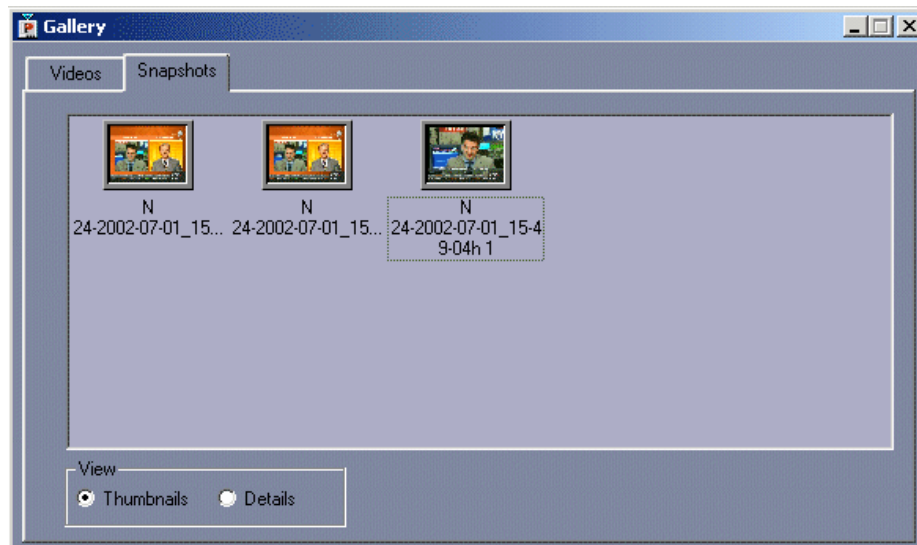
The *Snapshots* gallery contains information about all the snapshots you have recorded. Under *View* you can change the display of the information.

Context menu Please note, that you can carry out several actions by clicking with the right mouse button on the corresponding file. The following context menu is displayed:



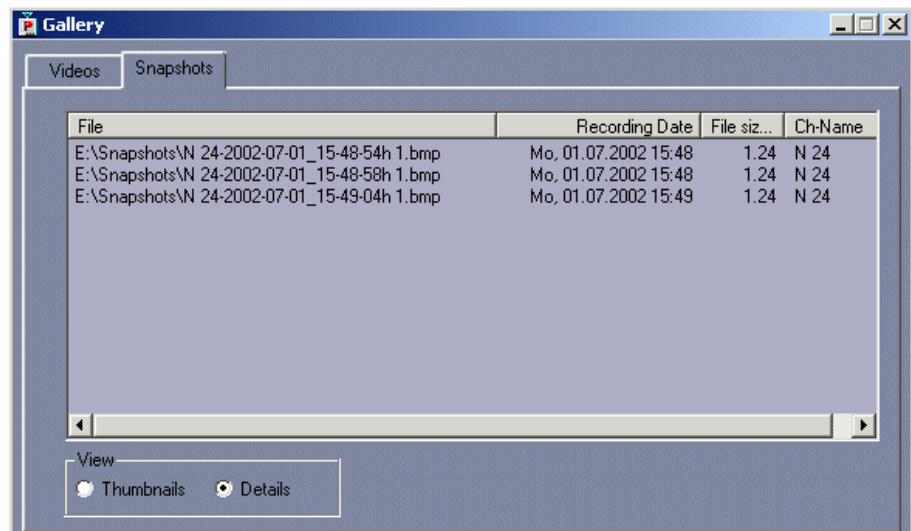
- ♦ *Open*: View the snapshot
- ♦ *Save...*: Save the file in the desired directory
- ♦ *Rename* the file
- ♦ *Delete* the file

View Thumbnails This view shows the recorded snapshots as symbols.




View Details In this view, you see detailed information about the recorded snapshots:

- ♦ *File*: Name and storage location of the snapshot
- ♦ *Recording Date* of the snapshot
- ♦ *Size* of the picture
- ♦ *Name* of the channel.



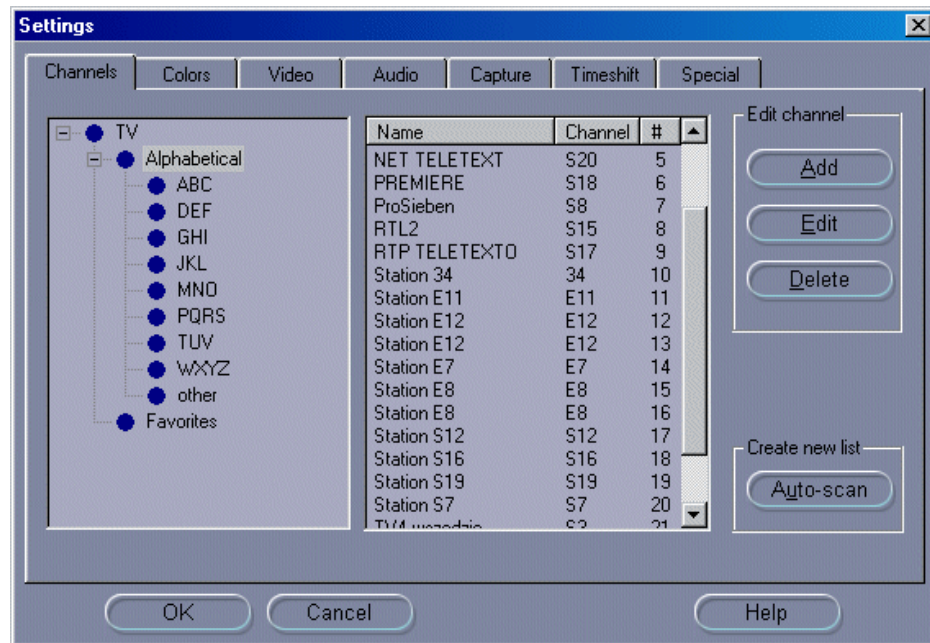
View picture By double-clicking on the highlighted picture, MS Paint, for example, or another picture processing program installed in your system, will open.

SETTINGS MENU

After clicking the  button or by using the *Settings* option in the pop-up menu, you come to the Settings menu. Here you can make further settings for the following functions:

- ♦ Channels
- ♦ Colors
- ♦ Video
- ♦ Audio
- ♦ Capture
- ♦ Timeshift
- ♦ Special

Channel settings



In this menu you can search for new TV channels and edit or change the channel list that already exists by adding new entries or deleting entries that are already in the list. You can also specify new channel categories and assign specific channels to them.

Edit channel list

Channel position

You can change the position of a channel in the channel list. To do so, click with the mouse on the corresponding channel and drag it with depressed left mouse button to another position.

If you hold down the Ctrl key while you highlight with the mouse, you can then move several channels at the same time.

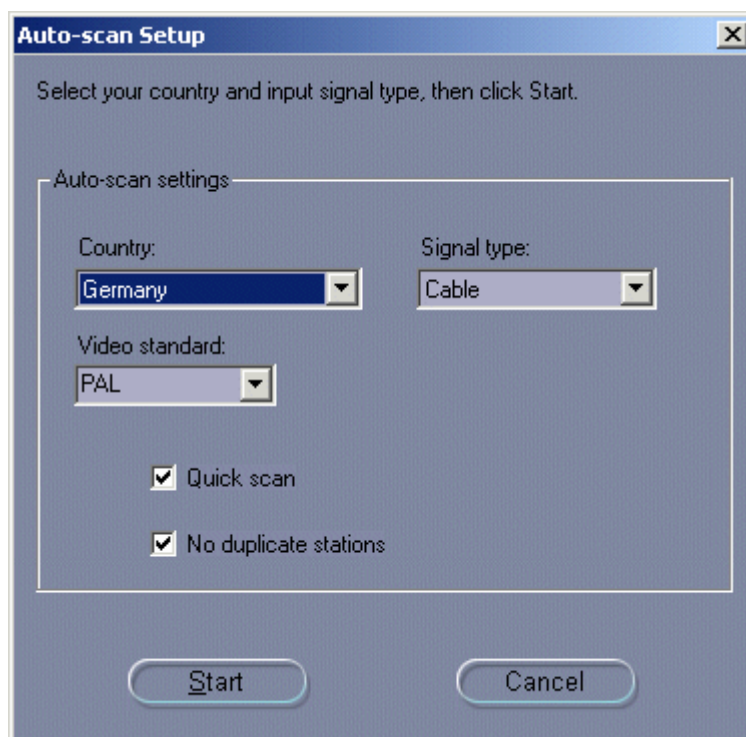
Sort list The channel list can be sorted by columns (name, number) by clicking on the respective column title.

You can also sort the channels by specific categories and thus combine your individual channel lists.

Enter new channel categories (e.g., sports, entertainment, reporting) in the left area of the window and drag the desired channels with depressed mouse button into the folder. After selecting a certain category, the channel list then appears with the channels that were assigned to it (see also the section on “Channel Display and Channel List”).

Channel search

To run a complete search, click on the *Autoscan* button. The following dialog appears:



**Country/
Signal type** In the window that appears, enter the country you are in and the signal type.

Video standard Choose the appropriate video standard (e.g. PAL, NTSC, SECAM). Please note that not all standards are available for all product variants.

Quick scan Use the option *Quick scan* to scan the air in larger intervals than normal. If you have cable TV, the quick scan usually suffices to find all available channels.

No duplicate stations

If a station is broadcasting on more than one channel, you may get duplicate entries in the channel list. To prevent this from happening, select the option *No duplicate stations*: The auto-scan only picks out the channel with the best reception. This function only works if the TV station is broadcasting with a VPS signal.

After clicking the *Start* button, the search will start, and any channel list that already exists will be overwritten.

Cancel search

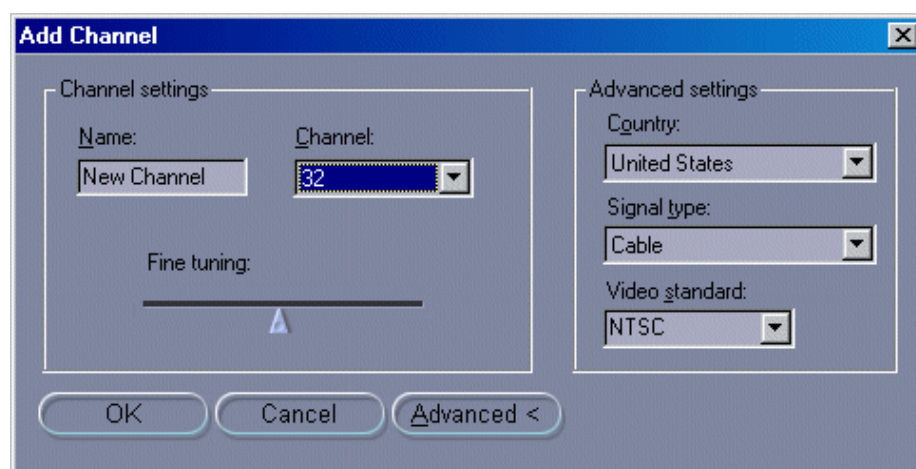
The search can be canceled at any time by clicking the *Cancel* button.

Channel names

PCTV Vision recognizes the names of the individual TV channels automatically as long as they broadcast the corresponding data. If this is not the case, a default name is assigned with the respective channel designation.

Adding a channel

Click on the button *Add* in the settings menu to open a window where you can enter the name of a new station and set a channel for reception in the channel list. If necessary, you can use the fine-tune slider to optimize the quality of reception.



If you click on the button *Advanced*, you can adjust the *Country*, the *Signal type* (antenna or cable) and the *Video standard* for the new channel. Please note that not all video standards are available for all product variants.



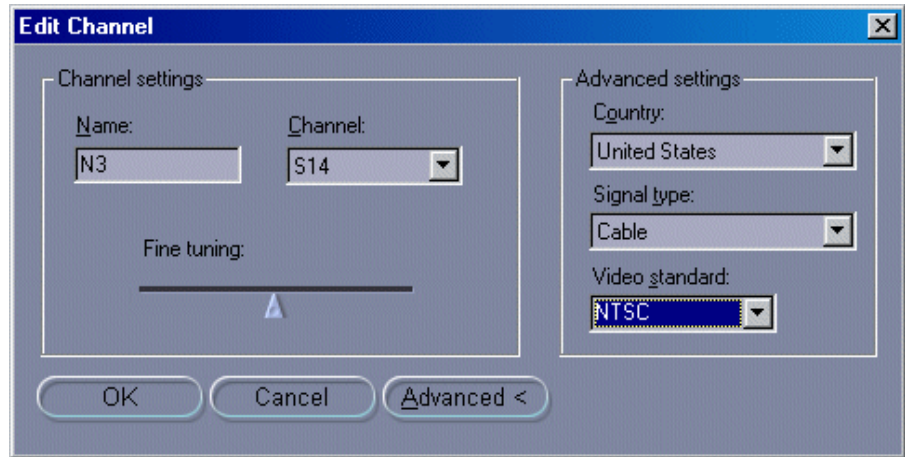
Note that these settings apply to the added station only!

Click on the *OK* button to add the new TV station with all the made settings to the channel list.

Changing the name of the TV station or channel

Click on the button *Edit* in the settings menu to open a window where you can change the name of the TV station and/or select another channel from the channel list.

In addition, you can use the fine-tune slider to improve the reception of a station.



If you click on the button *Advanced*, you can adjust the *Country*, the *Signal type* (antenna or cable) and the *Video standard* for the selected station. Please note that not all video standards are available for all product variants.

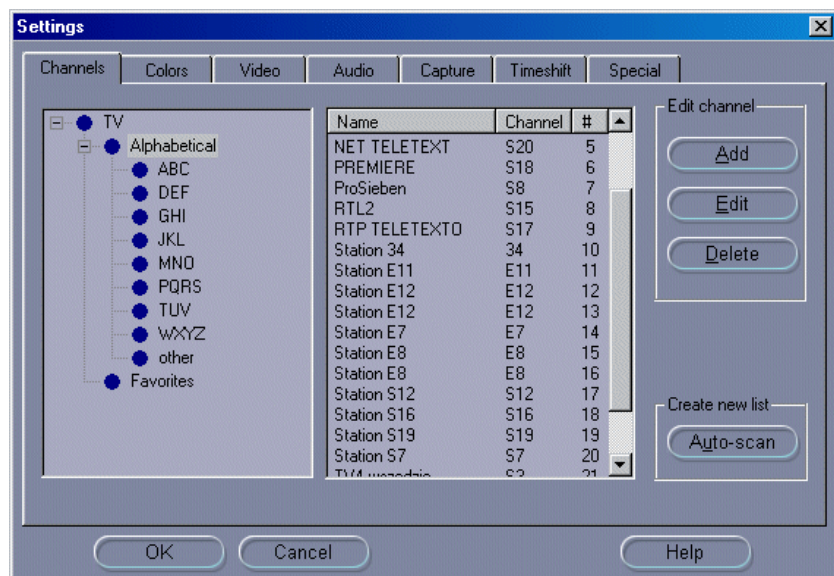


Note that these settings apply to the selected station only!

Click on the *OK* button to transfer the data to the channel list.

Deleting a channel

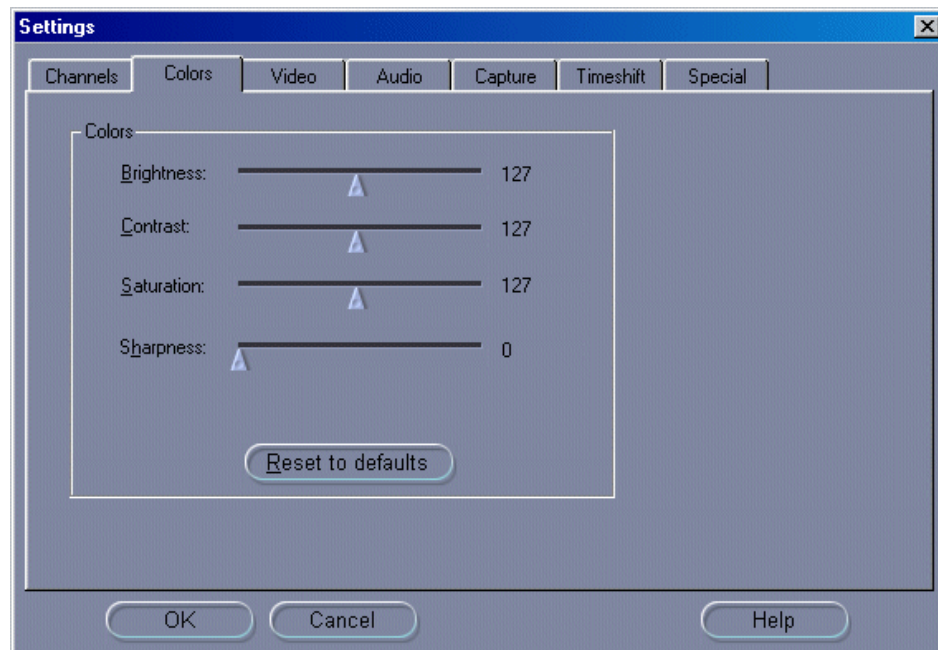
Highlight the station you want to delete in the channel list and click on the button *Delete* to remove the selected station from the list.



Color settings



These settings can only be made for analogous inputs (Composite or S-Video).

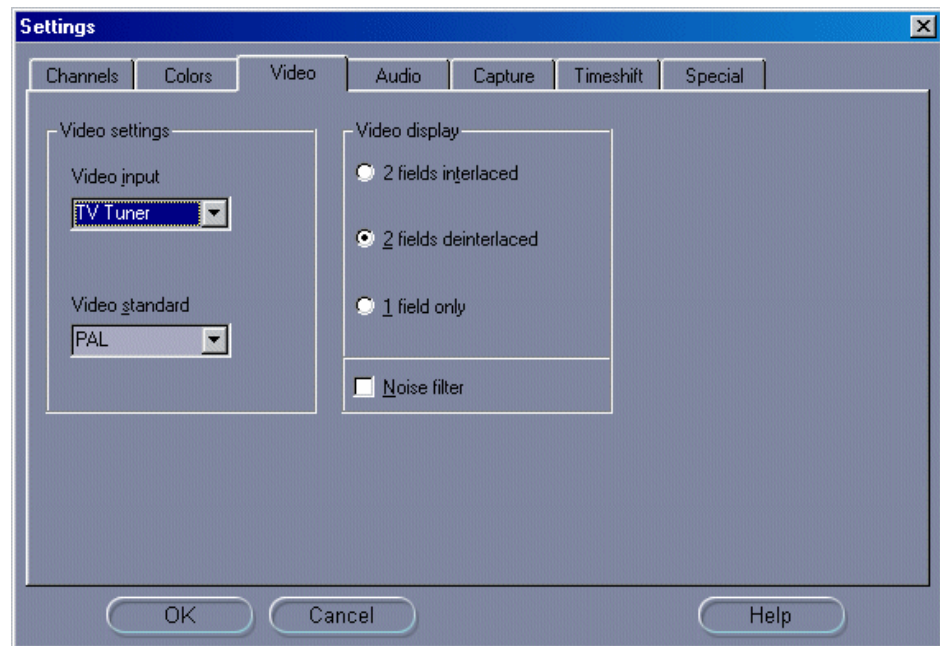


If the video picture of PCTV Vision is too bright, too dark, or if the colors are incorrect, you can adjust the color display using the *Brightness*, *Contrast*, *Saturation* and *Sharpness* regulators.



By clicking the *Reset to defaults* button, the respective default values will be set automatically.

Video settings



Video settings

Video input Here you can choose between TV, Composite and S-Video for the video input.

Video standard In the *Video standard* field and dependent on the norm of the connected video device (recorder, camera, etc.), you can select e.g., between the PAL, SECAM and NTSC standards. Please note that not all standards are available for all product variants.

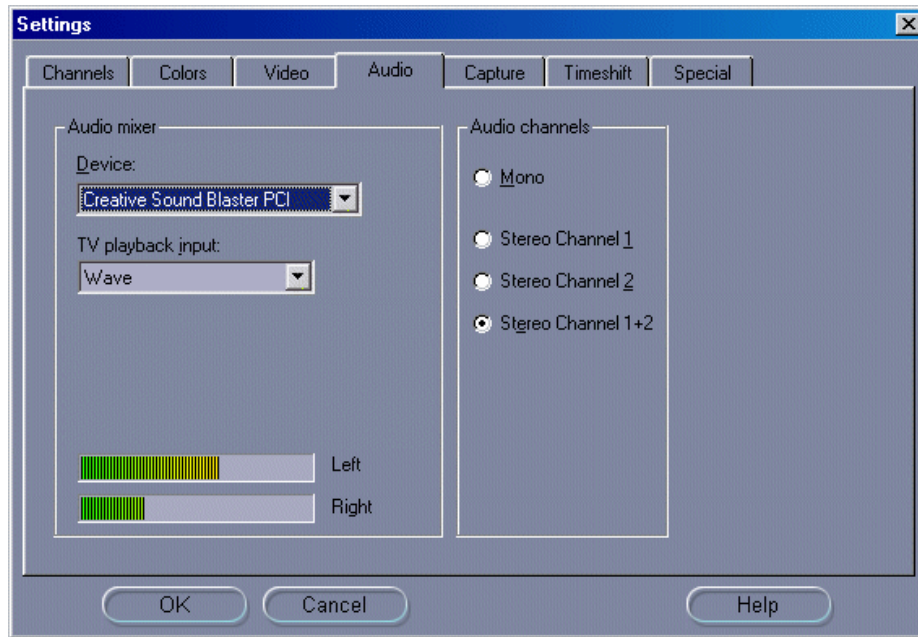
Video display

Here you have the choice between:

- ♦ 2 fields interlaced
- ♦ 2 fields deinterlaced
- ♦ 1 field only

Noise filter This function can be activated or deactivated depending on the noise on the picture.

Audio settings



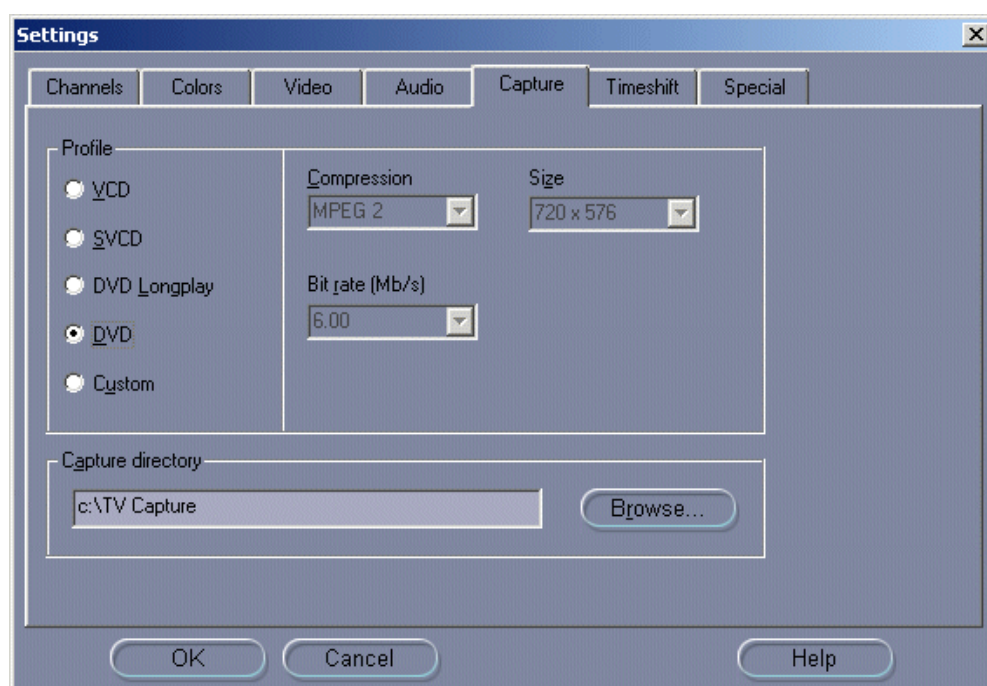
When connecting an analogous device, the sound is recorded and played back via the sound card. For this, the following settings must be made.

Audio mixer In the *Audio mixer* field, select the sound card used and enter which sound card input will be used for Audio playback and recording.

Audio channels Under *Audio cannels* you can choose between the usual settings ***Mono*** and ***Stereo***.

For a program with two language channels, for ***Stereo: (Channel 1+2)*** you have the additional possibility to choose between ***Stereo: Channel 1*** (for example original sound) and ***Stereo: Channel 2*** (for example your native language).

Capture settings



In this tab you can make all the settings required for making a video recording.

Video Capture

Here, choose the quality that you want for your recording or the storage medium that your video is to be finally suitable for.

Depending on the selection, the values for compression method, bit rate and size/resolution are pre-defined.

Quality/ Storage medium	Compression method	Bit rate	Resolution PAL/SECAM	Resolution NTSC
VCD	MPEG-1	1.15 Mbit	352 x 288	352 x 240
SVCD	MPEG-2	2.5 Mbit	480 x 576	480 x 480
DVD Longplay	MPEG-2	3.5 Mbit	352 x 576	352 x 480
DVD	MPEG-2	6.0 Mbit	720 x 576	720 x 480

Files with the ending ".MPG" are created in each case.

Custom When this option is chosen, the values in the following fields can also be chosen:

Compression

Set the type of compression required here. You can choose between MPEG-1 and MPEG-2.

Files with the ending ".MPG" are created in each case.

Bit rate

The higher the bit rate chosen, the better the picture quality of the recorded material will be – but also the larger your video file will be.

The **maximum possible bit rate** depends on the **USB version** that you use in your system:

USB 1.1: maximum bit rate **9,5 Mb/s**

USB 2.0: maximum bit rate **15 Mb/s**

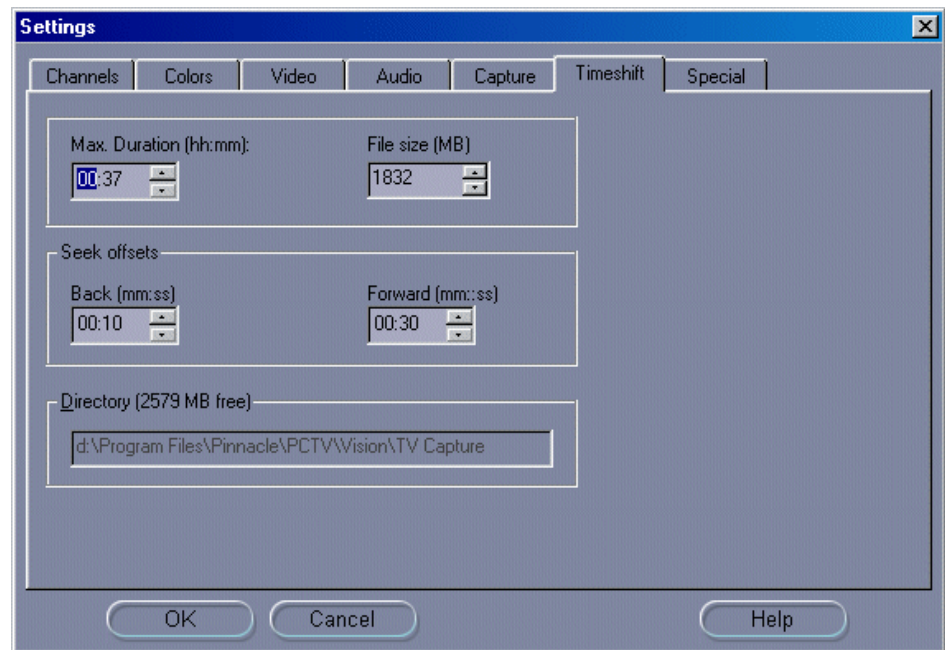
Size

Choose the resolution for the recording.

Capture directory

This field is used to define the directory in your computer where manual and programmed recordings are to be saved.

Timeshift settings



The following settings can be made for recording video in Timeshift mode:



Max. Duration, File size



Here you can enter the maximum time for your recording or the maximum memory available for Timeshifting. As these values are dependent upon each other, entering one value will automatically change the other.

If your corresponding hard drive memory is in use or the specified time is exceeded, the passages that were already recorded will be overwritten from the beginning.

Seek offsets

Here you can specify the passage you want to skip with the  or  functions.

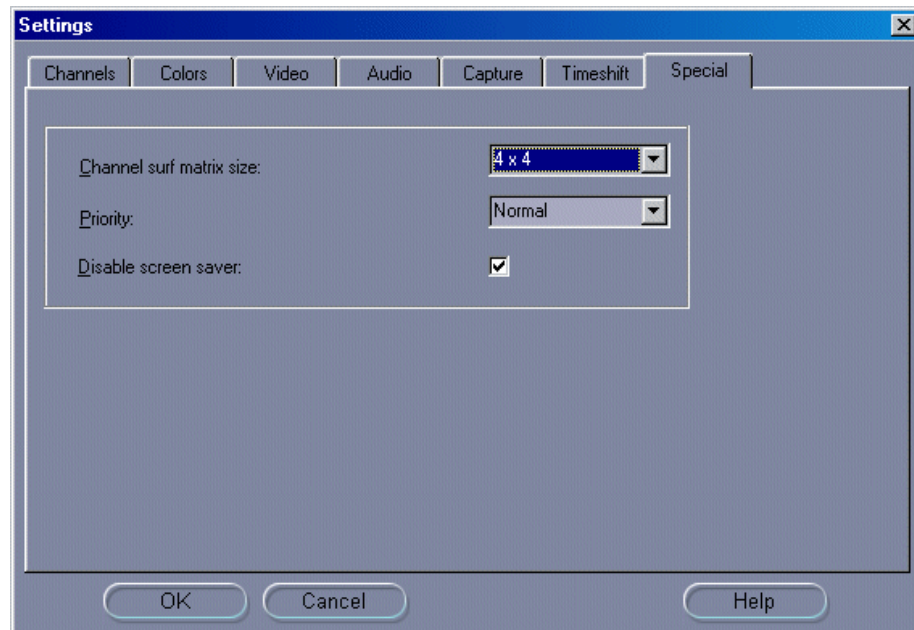
Directory

Here you can see in which directory on your computer the Timeshift files have been stored.

As standard, this is the same directory in which the manual/programmed recordings take place.

It is not possible to change the directory at this point. If necessary this must be carried out under *Capture settings*.

Special settings



General configuration settings can be made in this tab.

Channel surf matrix size Here, choose the number of stations that are to be displayed in the station preview.
See also under “Channel Matrix”.

Priority If you are a Windows **2000/XP** user, you can set the priority here that is to be granted to PCTV Vision by the CPU.



Please note that if the selection “*High*” is made, this can lead to a slowing down of other programs when they are being used in parallel.

Disable screen saver You can deactivate your screen saver using this check box. This is to be recommended if you want to have the viewing window visible at all times.

Using function keys

By using specific **function keys on your keyboard** you can execute the following commands.

F1	Call up online help
F2	Open the pop-up menu
F3	Hide or show the frame and toolbar
F4	Snapshot: Storage of a single frame as picture file
F8	Display channel list
F9	Open menu

You can also execute the following commands by using the following **keys or shortcut keys**:

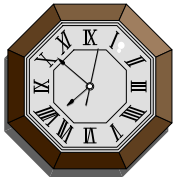
Alt - F4	Exit Vision
	Next channel from the channel list
	Previous channel from the channel list
Ctrl - M	Turn sound on/off
+ or	Increase volume
- or	Decrease volume
Number keys 0, 1, ..., 9	Direct input of a channel
Ctrl - A	Change video input (tuner, composite, S-Video)
Ctrl - F	Full screen
Ctrl - P	Start preview for all programs with already activated channel matrix: Exit channel matrix and use current channel.
Ctrl - L	Go to previous channel.
Ctrl - I	Display channel information
Ctrl - Z	Zoom
Ctrl - R	Switch between TV and recording mode
Alt - R	Start recording

Following **functions** can be used **only in the recording mode**.

Alt -P	Playback of the recorded file
Alt -	Back
Alt -	Forward
Alt - S	Stop

The following keys are used for the **Timeshifting functions**:

Space bar	Pause / Live-Pause (Timeshifting is started)
End	Switch to live TV
Picture	Jump +
Picture	Jump – (instant replay)



Chapter 5: Timeshift - Pure TV Enjoyment

WHAT IS TIMESHIFT?

Timeshift is when:

- ♦ you're watching the first half while recording the second half.
- ♦ the evening news takes a 5-minute break just for you.
- ♦ you can say goodbye to all of those commercials.

WHAT DOES TIMESHIFT OFFER?

Timeshift lets you record the current TV program and view it later.

In addition to the normal functions of a video recorder, you have all new options for designing your personal TV program.

Take a break if you feel like it!

These annoying harassments and interruptions are now a thing of the past. By simply pressing a button, you can stop the live TV program and record the rest of it automatically.

To continue seeing the rest of the program, all you have to do is press a button again. The recording is now played. At the same time, the live program continues to be recorded in the background and played back shifted in time so that you do not miss a single minute of the program.

Pure TV enjoyment!

You can tell Timeshift to advance or replay in time-lapse while it is still recording, to skip certain amounts of time, or to return to the live program.

Timeshift lets you play back at any time to repeat your favorite scene. The live program is recorded continuously so that you don't miss any of the rest of the program.

Time-lapse viewing means you don't get upset any more because of all the commercial breaks. The jump key lets you simply skip annoying commercials!

Watch without waiting – while recording!

If you would like to record a certain program, you can set the appropriate time just like with a video recorder.

To view the recording, there's no need to wait until the program or recording ends. You can begin watching even while the recording is being made. At the same time, the rest of the program continues to be recorded in the background and played back shifted in time.



For details on programming the recording, please see the “PCTV Vision” section of this user guide.

THE DIFFERENT FUNCTIONAL STATES

PCTV Vision offers four different functional states (also called “function modes”).

In addition to the respective symbols shown in the control panel, you can recognize the currently prioritized state by the color of the background of the time and position display.



Time- and position display

Here are the possible **functional states** and the associated background colors:

- | | |
|----------------------------------|--|
| Watch TV only
(black) | The selected station/video input is being displayed in the viewing window. |
| Record
(red) | A manually programmed or Timeshift recording is running. |
| Play
(blue) | A video file is being played. |
| Timeshift
(green) | The Timeshift function is active. |

Example:

A **manual recording** is running and the time and position display has a red background (functional state: Record).

If a **file that has now already been recorded is played back**, the background color of the time and position display changes to **blue** (functional status: Play).

If the **replay is stopped**, the **functional status changes back from Play to Record** and with it the **background color from blue to red**.

Combining the functional states

It is fundamentally possible to combine the four functional states, i.e. to use several functions at once.

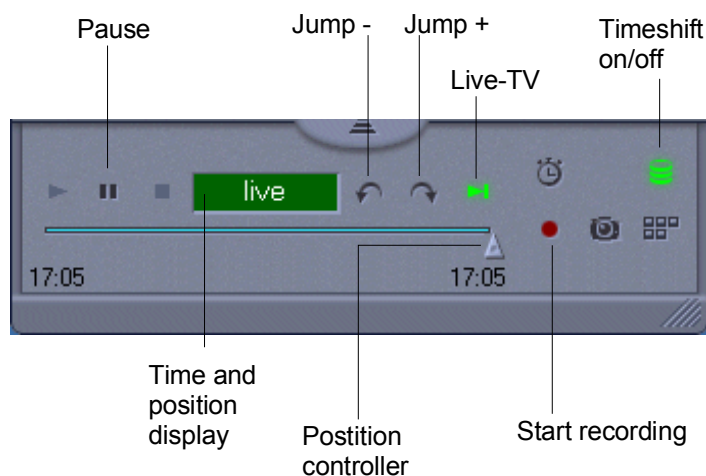
The following matrix gives an overview of the possibilities:

Priority functional state	Background color	Possible actions		
		<i>Record</i>	<i>Play</i>	<i>Timeshift</i>
<i>View TV only</i>	<i>black</i>	yes	yes	yes
<i>Record</i>	<i>red</i>	./.	yes	no
<i>Play</i>	<i>blue</i>	no	./.	no
<i>Timeshift</i>	<i>green</i>	yes	yes	./.

In the following example, you can see which actions can be active **as a maximum at the same time**:

- You start PCTV Vision and watch **TV only**:
The time and position display is **black**.
- You activate the **Timeshift function**:
The time and position display is **green**.
- You start a **manual recording**:
The time and position display is **red**.
- You start to **replay** a MPEG file:
The time and position display is **blue**.

TIMESHIFT FUNCTIONS IN DETAIL



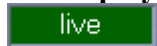
Timeshift on/off



Click on this button to turn Timeshift on or off.

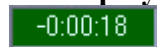
The following functions become active when Timeshift is turned on:




Time and position display



The background of the time and position display is green when the Timeshift function is activated. At the beginning, the display shows “live”.

Time and position display



As soon as the  or  buttons or the position controller  are used, the display shows the difference between the Timeshift recording and the “Live TV”.

Pause



Click on this button to pause the Timeshift function.



If you click on this button while you are watching TV only, the Timeshift function will automatically be started.

Jump - / +



Using these buttons, you can jump forwards or backwards over a pre-defined time passage in the Timeshift recording (see section on “Settings”).

Position-controller



Use the controller to get to a particular position within the Timeshift recording.

Live-TV




By clicking on this button, you can change to the live program. The Timeshift recording of your chosen program will be continued.

Start recording



With this button, you can start a manual recording from the current position while the Timeshift function is active.

The control panel will now be in the Record state.

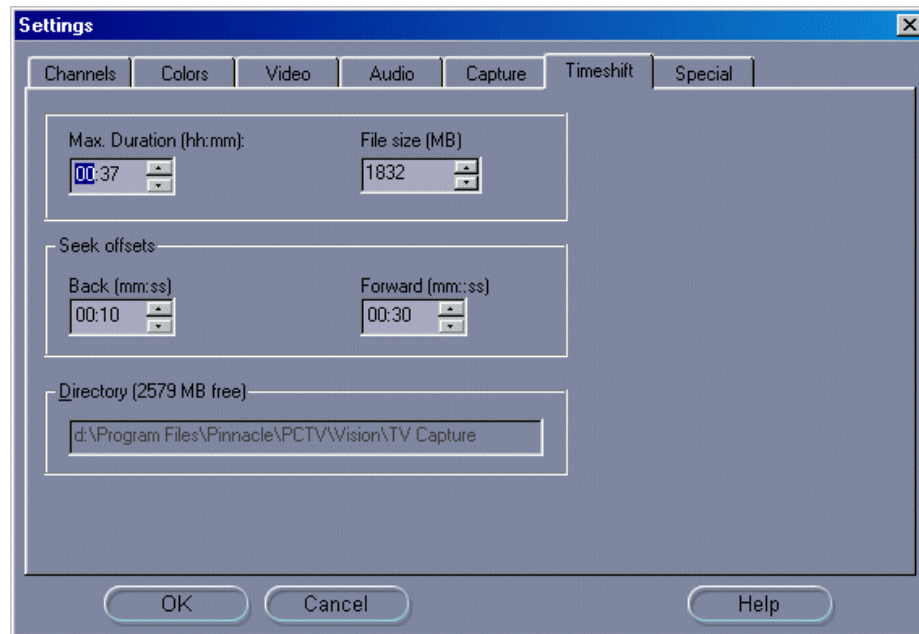
Clicking the  button again will stop the recording and Timeshift will become the priority function once more.



The functions, which you can also carry out using your remote control, are described in our PDF manual on the remote control. You can find this in the Pinnacle program group under *Start/Programs/.../Help/Remote control*.

SETTINGS

You can get to the *Timeshift* tab via the PCTV Vision “Settings” menu (see also the “PCTV Vision” section of this user guide).





Max. Duration, File size

Here you can enter the maximum time for your recording or the maximum memory available for Timeshifting. As these values are dependent upon each other, entering one value will automatically change the other.



If your corresponding hard drive memory is in use or the specified time is exceeded, the passages that were already recorded will be overwritten from the beginning.

Seek offsets

Here you can specify the passage you want to skip with the  or  functions.

Directory

Here you can see in which directory on your computer the Timeshift files have been stored.

As standard, this is the same directory in which the manual/programmed recordings take place.

It is not possible to change the directory at this point. If necessary this must be carried out under *Capture settings*.

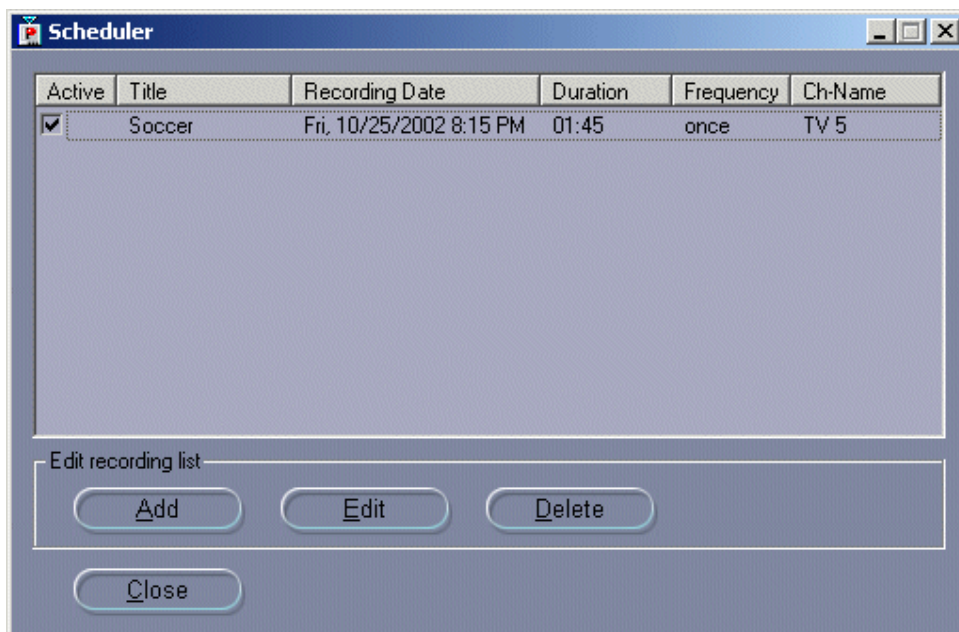
“TIMESHIFT” WHENEVER YOU WANT!

Any day at 9:00 PM



You know you can't make it back home tomorrow in time to see the beginning of the soccer game, so you program the Scheduler.

You click on the  button in PCTV Vision's main window and enter all the data in the Edit Recording Wizard:



Next day



8:15 PM

The recording of the game begins when you programmed it to do so.



9:15 PM

You return home during the second half and simply slide the position control back to the required starting time. You can now watch the game from the beginning while it is being recorded for you to the end.


With the various Timeshift functions you have complete freedom of movement during the Timeshift recording.


Use




, if you need to take a break



or , if you want to skip parts of the recording or want to have another look at an exciting part of the game

, whenever you want to switch to the live program

, to find a certain position in your recording.



10:00 PM



The Timeshift recording ends just like you programmed it the day before.

A new day




10:05 PM

While you're watching the news, the telephone rings.


To avoid missing anything in the news, click the  or  symbol to turn on the Timeshift function. All the news will now be recorded and you can stay on the phone as long as you want.





10:10 PM


You're done on the phone and click on , to continue watching the news where you left off.

Use

, if you need to take another break

 or , if you want to skip parts of the recording

, if you want to switch to the live program

, to find a certain position in your recording.



Chapter 6: PCTV WebText



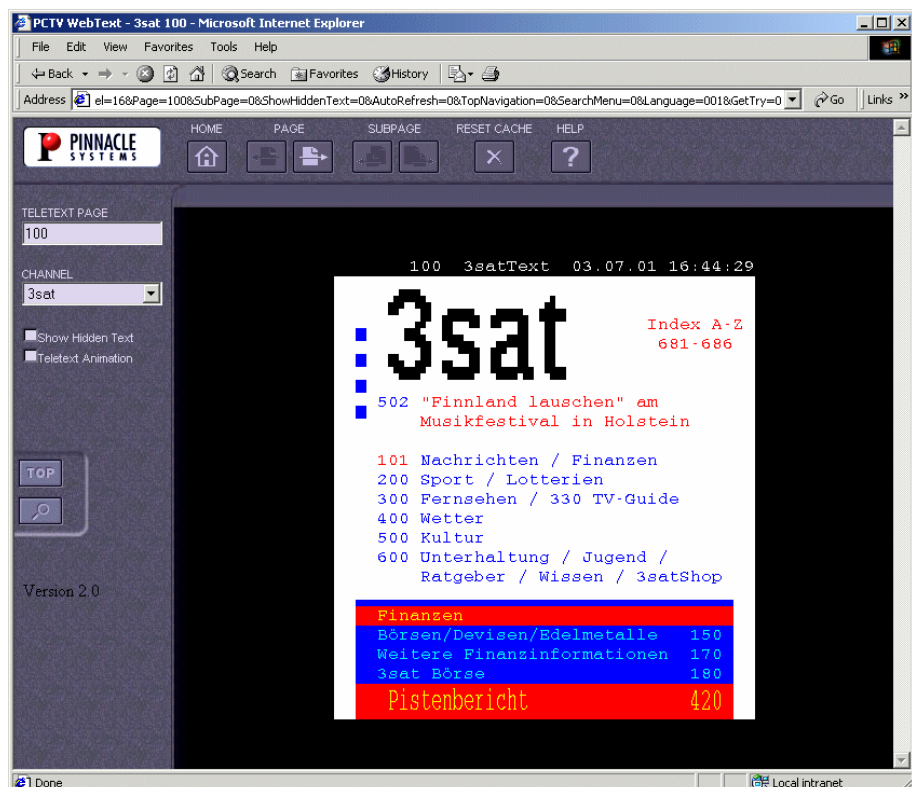
Important: It is not possible to receive Teletext in all countries. Furthermore, not all stations provide Teletext service.

OVERVIEW

The PCTV WebText application lets users view and edit the additional information that is broadcast together with TV signals in Europe and in many other countries of the world. This signal, which is known as Teletext or Videotext, is a text-based transmission method.

The data is transmitted in the unused lines of the television picture at a rate of approx. 8 pages per second.

Pinnacle's PCTV WebText Videotext browser has been optimized for use with Microsoft Internet Explorer 4.0 and higher or Netscape Navigator 4.X.



PCTV WebText Highlights

- ♦ View Teletext pages in your Internet browser (e.g., Microsoft Internet Explorer or Netscape Navigator).
- ♦ Convenient page navigation (convenient browsing) through direct entry of via hotlinks.
- ♦ Easy navigation via the TOP-Text Navigator or the smart keyword search.
- ♦ TV tuner function.
- ♦ Open mapped Internet addresses right in the Videotext window.
- ♦ WebText as desktop wallpaper.
- ♦ A multichannel cache (page memory) allows rapid and convenient access to the teletext pages.

Moreover, using the standard browser functions, it is possible to define a WebText page as home page, save and print WebText pages, configure them as favorites or place them on the desktop as shortcuts.

System Requirements

The following requirements should be met to ensure proper functioning of the WebText application:

- ♦ In order to use WebText the TCT/IP Protocol has to be installed. The TCP/IP Protocol is installed by default during an installation of Windows. The easiest way to install the TCP/IP Protocol is to install a Dial-Up-Network (select direct connection via serial port). A modem is not required. It is not necessary to configure the TCT/IP Protocol.
- ♦ Version 4.0 (or higher) of an Internet browser should be installed on your system.
- ♦ While Internet access is not absolutely necessary, it will expand your possibilities when using the WebText application.



If a browser other than Internet Explorer is installed on your system, for example, Netscape Navigator 4.X, then you can also use that browser with the WebText application. In that case, however, operation may vary from the description below.

Starting PCTV WebText

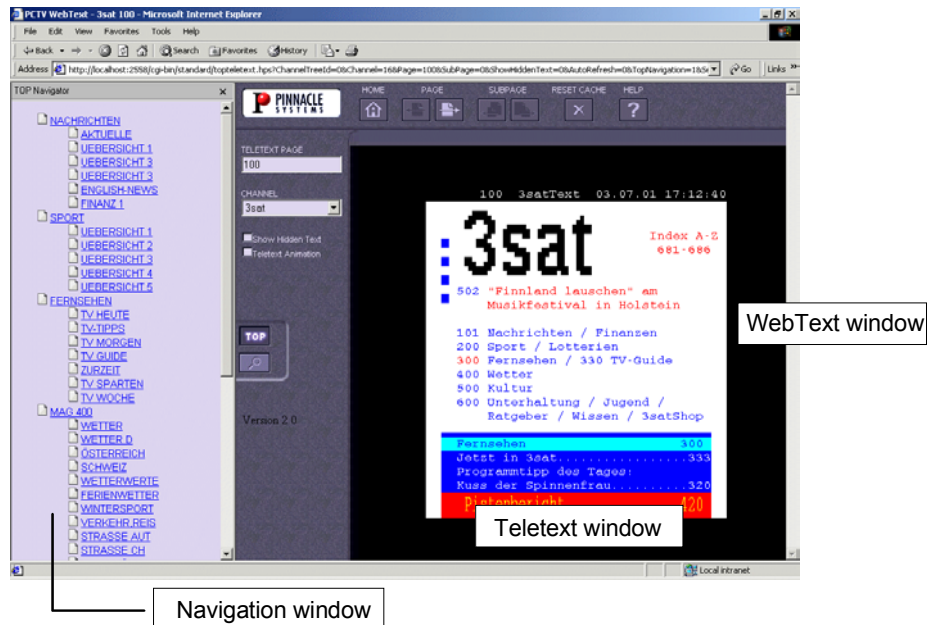
To start PCTV WebText use the Pinnacle program group.

If the station to which you are tuned has Teletext service, that station's index page (page 100) will appear automatically in the PCTV WebText main window.

THE PCTV WEBTEXT MAIN WINDOW

Your standard browser will be used to display Teletext information.

The WebText main window consists of the Teletext window (also called the Videotext window), the navigation window, and the controls described below.



WebText Window: Toolbar



The user-friendly toolbar gives you immediate access to all frequently used commands.

HOME Click on this button to return to the index page (Page 100) of current station, in other words, the default Teletext setting.

PAGE Use these two buttons to view the previous or next Teletext page.



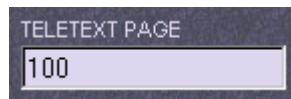
Important: These buttons are especially for navigation in the WebText application. To navigate between other web pages, please use the *Back* and *Forward* buttons of your Internet browser.

SUBPAGES A Teletext page can lead to several subpages. Use these two buttons to browse back and forth among the subpages.
If the selected, active page does not lead to any subpages, then these buttons will be grayed out.

**RESET
CACHE
(Page memory)** WebText makes use of an extensive page memory. This allows rapid and convenient access to the teletext pages. When a particular page is requested, the first resort is to the cache. If the page is available there, it can be displayed immediately without any delay. If the page concerned is not yet in the cache, it must first be loaded, i.e. the system “waits” for the page. The cache is continuously updated whenever new teletext pages arrive.
You can delete the cache by clicking on this button.

HELP If you need additional information about using the WebText application, click on this button and select the desired topic.

WebText Window: "Teletext Page Display"



This field shows the number of the currently active Videotext page. Use your keyboard to enter a new page number at any time. Please note that page numbers always have three digits.



If links to other Videotext pages appear in the Videotext window (for example, "News...110"), click on the three-digit number to jump directly to the page in question.

WebText Window: Channel



Teletext content varies from station to station. To read Videotext information from another station, switch to the desired station here.



All pages of a previously tuned station are buffered by the application in the multichannel cache. In this way, the pages are immediately available without any delay when the station is selected again.

WebText Window: Checkboxes

Show Hidden Text Some Teletext pages contain hidden information, for example, solutions to TV puzzles, VPS times, etc.. To view this information, activate the checkbox *Show Hidden Text*.


Show Animation If a Teletext page encompasses multiple subpages and the *Teletext Animation* function is active, the display will spring forward to the next page automatically each time a new subpage is received.
If no subpages are available, then the main page will be redisplayed automatically each time it is refreshed by the active station.
This function is especially helpful when the active station frequently refreshes its pages.

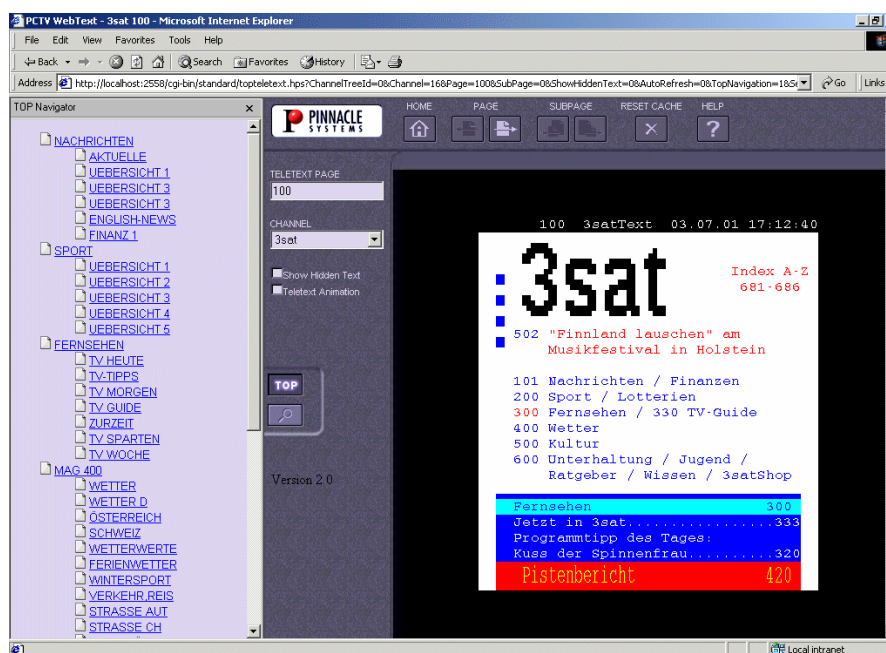
NAVIGATION WITH PCTV WEBTEXT

TOP – The Smart Table of Contents

TOP ("Table of Pages") is an additional service that broadcasters provide to Videotext users. Not all stations, however, support this service.

TOP is a type of table of contents in which all of the information offered on various subject areas is summarized. It thus permits fast, user-friendly orientation within the Videotext program offered even without knowledge of the page numbers.

Click on the  button in the WebText window to make the TOP Navigator appear at the left edge of the window. The TOP Navigator shows a list of topics offered by the station in question. Click the mouse on the appropriate topic to go quickly to the desired information.




Close TOP To close the TOP Navigator, click on the close box of the TOP window.

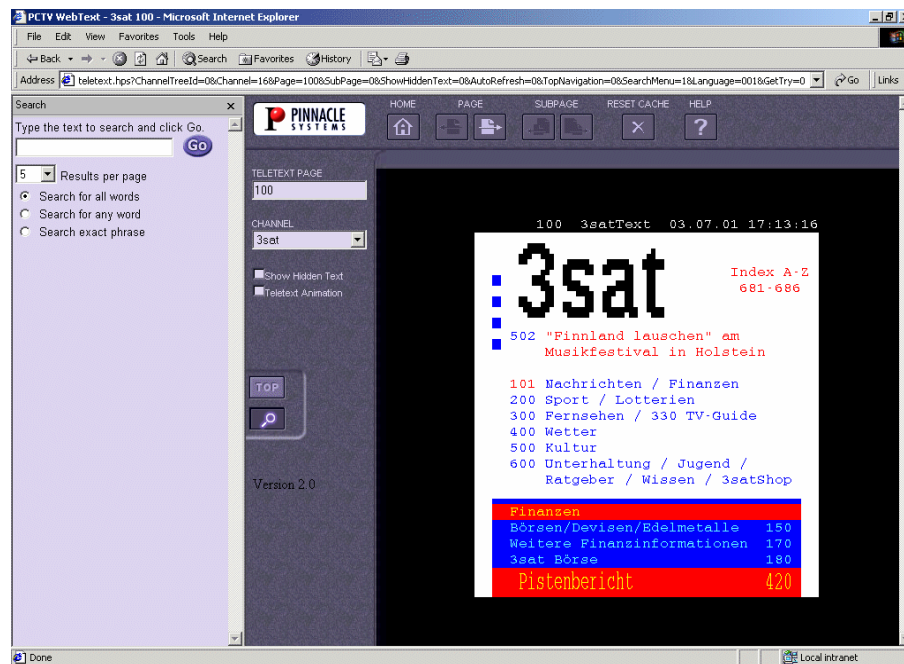
Keyword Searches with PCTV WebText

PCTV WebText makes it easy to search for even complex search strings within all stored Teletext pages.

WebText Database

PCTV WebText stores all Videotext pages received from the currently active station in a database. This database is updated continually.

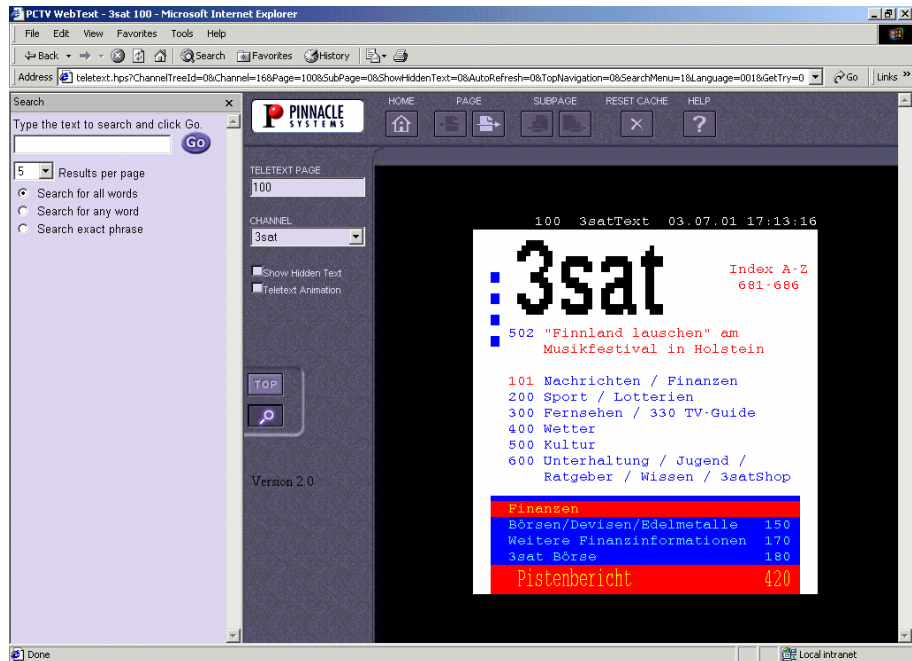
Please pay attention to the Pinnacle logo in the upper left-hand corner of the WebText window. As long as the  rotates, pages are still being received and stored in the database.



Important: The search is conducted only in the Teletext pages that have already been received and stored in the database!

Conducting a Search

1. To start searching, click the  button in the WebText window. The Navigation window will now appear on the left side:



2. Type your search string in the text box. This may be an entire sentence or a single keyword.
3. Activate one of the following radio buttons, depending on the type of search that you want to carry out:

- ♦ ***Search for all words***

Searches for all of the words entered, regardless of their order in the text. This is known as an "AND-operation" ("conjunction").

Example: A search on "Weekend Concert" may lead to the result "Concerts will be held on the weekend".

- ♦ ***Search for any word***

The text found contains at least one of the words specified. This is known as an "OR-operation" ("disjunction").

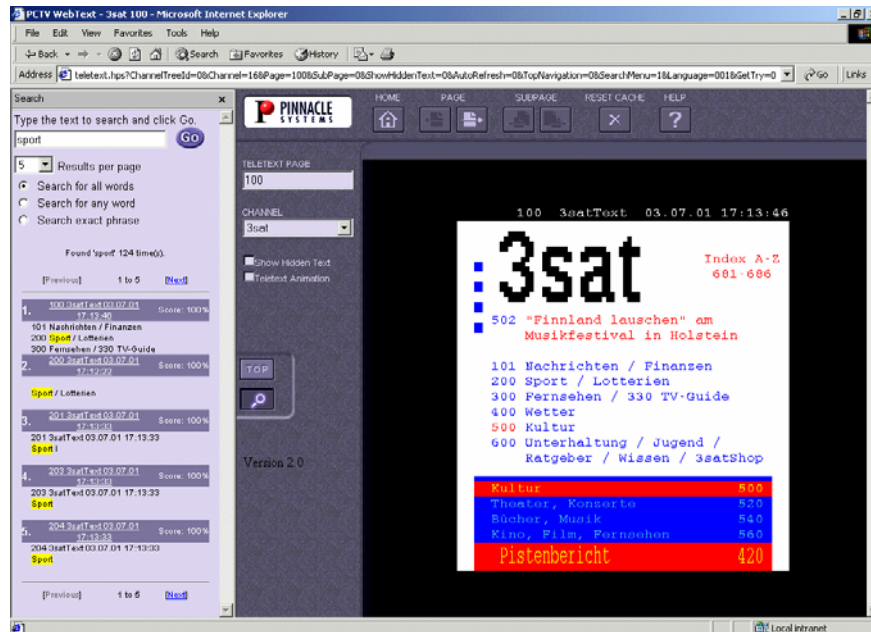
Example: A search on "Weekend Concert" leads, for example, to the result "The sun will shine on the weekend".

- ♦ ***Search exact phrase***


The text found will contain the exact phrase entered.

Example: "Weekend Concert" leads to the exact result "Weekend Concert".


4. Now click on the *Go* button.
The search results will be displayed in the search window:



You can jump directly to the individual hits, by clicking on them, in order to obtain more detailed information.

Use the *Next* button to view the next group of hits. You can determine the number of hits displayed via  Results per page.

New Search To start a new search, enter the new search string and click on *Go*.

Exiting the Search Function To exit the search function, click on the close box of the search window or on the  button.

Closing PCTV WebText To close the PCTV WebText application, click on the close box of the Internet browser, or via the Internet Explorer menu system with *File, Exit*.

OTHER TIME- AND WORK-SAVING FUNCTIONS

Changing Font Sizes in WebText

To change the font size in the WebText window, select the desired setting in under *View, Font Size* in the Internet Explorer menu bar.

Direct Internet Connection

You can jump directly to Internet addresses shown in the Videotext window by clicking the mouse on them.

For this, of course, your system must be able to access the Internet.

Creating "Drag & Drop" Shortcuts on Your Desktop

To create desktop shortcuts for your favorite Videotext pages or Internet addresses, proceed as follows:

In the Videotext window, mark the corresponding page number or Internet address, then hold down the left mouse button and drag the page number/Internet address to the desired position on your desktop.

Now you can go straight to the specified page/address by double clicking on the shortcut.



For this functionality the WebServer has to be activated. (see the corresponding icon in your taskbar). If the server is not active yet, you can activate it via the Pinnacle program group `.../Tools/PCTVWebServer`.

WebText as „Active Desktop“

You can configure the WebText application as an active desktop, so that you are always able to access all functions from the desktop.



For this functionality the WebServer has to be activated. (see the corresponding icon in your taskbar). If the server is not active yet, you can activate it via the Pinnacle program group `.../Tools/PCTVWebServer`.

Activate Active Desktop

Proceed as follows:

1. Start WebText and click the right mouse button while pointing at your desktop. Select the command *Properties* in the context menu.
2. In the *Display Properties* dialog box, select the *Web* page. Mark the checkbox *Display Active Desktop as Web Page* and then click on the button *New...*
3. Now the query *New Active Desktop Object* will appear. Answer *No*.

4. In the ensuing dialog box, *New Active Desktop Object*, enter the information from the address bar of the Internet Explorer under *Location*: for example, <http://localhost:2558/cgi-bin/start.hps>. Click on *OK* to save your changes.
5. When the next dialog box, *Add Element to Active Desktop(TM)* appears, you should respond by clicking *OK*.
6. You should also acknowledge the window *Display Properties* by clicking *OK*.
7. Now the Telex window will appear on your desktop. You can resize it up to full-screen at any time by dragging the sides of the window with the mouse.

Hiding the Active Desktop

To hide the image on your desktop, use the close box of the WebText window, which appears whenever you move the mouse pointer to the top edge of the window.

You can also open the context menu by clicking the right mouse button while pointing at the desktop. In this menu, you should then deactivate the option *Display as Web Page*.



You can also use this context menu to reactivate the Active Desktop function!

INTERNET BROWSER

Using your Internet browser, you can configure WebText pages as Start Page, save them, print them, add them to your favorites, or create shortcuts to them on your desktop.

For detailed information, please start the onscreen help for your Internet browser.



Appendix A: Tips & Tricks

This chapter gives you important hints as well as tips & tricks on the subject video capturing.

HARDWARE REQUIREMENTS

Hard disk speed

If the hard disk works too slow, the PC cannot save the digitised images fast enough and the drop-out rate increases. The drop-out rate is the number of images which are not saved during capturing. This results in jerky playback. Your hard disk should offer a transfer rate of 5 MBytes/sec under Windows.

To take advantage of the full transfer rate, the option "DMA" should be checked in the Device Manager for your hard disk (see "Settings in Windows Me" or "Settings in Windows 2000 and Windows XP").

Memory

In general: The more memory available, the better.

Video source requirements

If you can choose between the Composite- and the S-Video input, for quality reasons prefer the S-Video input.

ENHANCED-IDE HARD DISKS

With some E-IDE hard disks, high data rates result in an unsmooth playback when playing back video files, because the hard disk is recalibrated while a file is read. This is not a malfunction of our product but is due to the functionality of your hard disk and the other system components.

If you have received a disk with special busmaster drivers with your E-IDE hard disk and/or motherboard, please install these drivers in your system, because the disk performance will be improved considerably.

For accelerating the transmission of large amounts of data like in this case the video data, activate the DMA (**D**irect **M**emory **A**ccess) for all hard disks of your computer (see “Settings in Windows Me” or “Settings in Windows 2000 and Windows XP”).

HINTS FOR IMPROVING THE CAPTURE PERFORMANCE OF YOUR HARD DISK

General

During capturing of videos a large amount of data is transferred from the capture board to the hard disk. You might find that your system cannot keep up with the required amount of data transfer for the settings you have chosen.

When capturing, your system might pause, the video might be jerky or jitter (not smooth), and some of the frames might be dropped (not saved to disk). Playback quality of such a video is typically unsatisfactory.

To avoid such problems, we herein have described a number of practices to optimise your system.



Please, bear in mind that each system is reacting different. Something that improves performance on one system might not be effective on another system.

Installing hard disks

The Windows operating systems support 32-bit hard disk access. Please check in *Start/Settings/Control Panel/System/Device Manager* whether your hard disk drive or your SCSI controller has been detected by Windows correctly (no yellow or red warnings in the *Device Manager* behind the device groups). If not, the data transfer rate of your hard disk will not suffice for a satisfying quality when recording and playing back video.

If possible, install a second hard disk for capturing and saving all of your video clips. For recording and playing back video a SCSI hard disk with SCSI controllers should be preferred.

You can save temporary files to your system hard disk or another partition. The Windows operating systems access system files during recording and playback. If these files are located on the same hard disk as the video clips, the head has to be repositioned, which leads to one or more dropped frames (unsmooth playback).

Optimising the hard disk(s)

Because capturing of videos is a very hard-disk intensive procedure, optimising the files on the hard disk that you will use for capturing is the most important task in optimising capture performance. In the following you will find some detailed suggestions for doing this.

Partitioning the hard disk

You can reserve a complete hard disk or a partition of the hard disk exclusively for digitising video clips.

When you format such a hard disk/partition, please do not use the format type Quick (erase) as this leaves old data on the disk. Format the hard disk/partition with the option *Full*.

Defragmenting the hard disk(s)

Usually, the hard disk is searched for free spaces. If a hard disk is in use for some time, the files are fragmented and saved in different segments of the disk. During the video digitising process the hard disk tries to fill the free gaps. This increases the access time and the drop-out rate. In this way some images are missing and the video playback is jerky. After defragmentation the images are saved on a contiguous segment, i.e. they are not separated any more.

For this purpose, Windows offers a defragmenting tool.

If you have two hard drives - a system drive for the operating system and the programs and a drive for the video data to be saved - you should defragment both. The system drive is carrying out important tasks during video editing and therefore should be optimised, too.



To reach an optimal performance, the capture drive should be defragmented before each capture session and the drive containing your saved images should be defragmented before each playback.

HARD DISK CAPTURING CAPACITY DATA

The maximum amount of digital video and audio data that can be stored is dependent upon the data rate at which the television stations transmit their signals. This data rate is not the same for all stations.

Some stations use the static multiplex system, which means that the picture information is only coded with the data rate that is actually necessary. Other stations currently use constant data rates.

For this reason, it is not possible to give a fixed conversion formula here for the relationship between the size of the hard disk and the possible capturing capacity.

It is generally true to say that the better the picture quality and the higher the data rate, the fewer programs will fit on the hard disk. One and the same film captured from different stations can therefore take up different amounts of space on the hard disk.

The following table gives you an indication of the possible capture durations for different sizes of hard disk depending on the transmitted data rate:

Hard disk capacity	Capture duration at a constant data rate of 5 Mbit/s	Capture duration at a constant data rate of 3 Mbit/s
10 GByte	4.5 h	7.5 h
15 GByte	6.8 h	11.3 h
20 GByte	9.1 h	15.1 h
30 GByte	13.6 h	22.7 h
40 GByte	18.2 h	30.3 h
50 GByte	22.7 h	37.9 h
60 GByte	27.3 h	45.5 h
80 GByte	36.4 h	60.6 h
100 GByte	45.5 h	75.8 h

SETTINGS IN WINDOWS ME

The system applet of the Windows Me Control Panel contains several options you can enable or disable for optimal capture performance. During capturing the drive should write as much data as possible and not spend time with software optimisations or checking for system changes.

To access these options in Windows, click the *Start* menu. Under *Settings* click *Control Panel*, and double-click the *System* applet. In the window *System Properties* you can make the desired settings.

- ♦ ***Device Manager* tab:**

Click *CD-ROM* and select your CD-ROM drive. Click the *Properties* button, select the *Settings* tab and ***clear*** the *Auto insert notification* check box. Click *OK*.

Additionally, in the list under *Disk Drives* click on the available disk(s) of your computer (one after the other). For each drive activate the checkbox *DMA* under *Properties* in the *Settings* tab and confirm with *OK*.

- ♦ ***Performance* tab:**

Click the *File System* button and drag the *Read-ahead optimisation* slider to *None* (the default is *Full*).

While still on the *File System Properties* dialog, select the *Troubleshooting* tab and check *Disable write-behind caching* for all drives. Confirm with *OK*.

You will have to restart your machine now for the new settings to take effect.

SETTINGS IN WINDOWS 2000 AND WINDOWS XP

The system applet of the Windows 2000/Windows XP Control Panel contains several options you can enable or disable for optimal capture performance. During capturing the drive should write as much data as possible and not spend time with software optimisations or checking for system changes.

To access these options in Windows, click the *Start* menu. Under *Settings* click *Control Panel*, and double-click the *System* applet. In the window *System Properties* you can make the desired settings.

- ♦ **Click on the *Hardware* tab, then on the *Device Manager...* button under *Device Manager*:**

In the list under *IDE ATA/ATAPI Controller* first click on ***Primary IDE Channel*** using the right mouse button and choose *Properties* from the context menu. Then go to the *Further Settings* tab.



If two devices are shown, carry out the following settings for both devices.

Pay attention to what appears in the *Current transmission mode* box at the bottom. If *Ultra DMA mode* is displayed, the correct setting is already active and you do not need to make any changes.

If this is not the case, choose the *DMA, if available* setting from the *Transmission mode* list box. *Ultra DMA mode* will then appear after the computer has been restarted.

Confirm with *OK*.

Now click on ***Secondary IDE channel*** in the list with the right mouse button and carry out the same settings as for the primary IDE channel.

You will have to restart your machine now for the new settings to take effect.

REDUCING NONCAPTURE-RELATED MACHINE ACTIVITY

Anything that interrupts the system or consumes CPU time for purposes other than capture can potentially decrease capture performance. Consider performing the following tasks to see if they affect performance on your system.

- ♦ **Close all applications except the capture application**

- ♦ **Turn off the screen saver**

To do so, right-click the desktop, click *Properties*, select the *Screen Saver* tab, choose *(None)* from the screen saver drop-down combo box and confirm with *OK*.

- ♦ **Turn off TSR (Terminate and Stay Resident) programs**

TSR programs are programs that perform certain operations after the computer has been started and install a part of the program permanently into the memory. The resident (still active) part is continuously performing certain background operations now, for example virus scan operations.

- ♦ **TSR programs displayed in the taskbar**

If there are TSR programs displayed at the right bottom of your taskbar, you can turn them off in the following way:

Right-click the corresponding symbol in the taskbar and select the option *Exit* or *Close* from the context menu that appears now.

- ♦ **TSR programs not displayed in the taskbar**

In this case start the Task Manager with the keyboard command CTRL + ALT + DEL. Select the applications to be turned off one after the other and click the button *End Task*.

The corresponding symbols disappear from the taskbar now or they are indicated with a red "Warning" sign.

- ♦ **Turn off your printer**

- ♦ **Disable your network card**

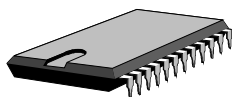
If you have a network card in your computer, disable it. Sending and receiving data over the network can interrupt the system, even if you are not actively doing anything over the network.

LED SIGNALS OF THE PCTV DELUXE BOX

At the front of the PCTV Deluxe box there are 6 LEDs: 3 green, 2 yellow, and 1 red. Depending on which of them are on/off/blinking, you can draw conclusions about the functional state of the box and about error messages.

The following table is showing you the possible combinations with the corresponding meanings:

LEDs	<i>green</i>	<i>yellow</i>	<i>red</i>	<i>yellow</i>	<i>green</i>	<i>green</i>	Functional state/ Error message
Combination							
0	off	off	off	off	off	off	- Device off / no power
1	on	blinks	blinks	blinks	blinks	blinks	- Power on - USB not connected
2	on	blinks	off	off	off	off	- Power on - USB connected - Drivers not initialized
3	on	on	on	on	off	off	- Power on - USB connected - Drivers initialized - TV Tuner Input selected - Signal on TV Tuner
4	on	on	off	blinks	off	off	- Power on - USB connected - Drivers initialized - TV Tuner Input selected - no signal on TV Tuner
5	on	on	on	off	on	off	- Power on - USB connected - Drivers initialized - Signal on S-Video Input
6	on	on	off	off	blinks	off	- Power on - USB connected - Drivers initialized - no signal on S-Video Input
7	on	on	on	off	off	on	- Power on - USB connected - Drivers initialized - Signal on Composite Input
8	on	on	off	off	off	blinks	- Power on - USB connected - Drivers initialized - no signal on Composite Input



Appendix B: Technical data

Bus system

USB 2.0 (backwards compatible with USB 1.1)

Antenna input

75 ohms, F connector or IEC

Video and Audio Inputs

S-Video

Composite video

Audio left and right

TV Tuner

Depending on the delivery scope;
corresponds to tuner standards:












Example countries	Tuner variant	Frequency
D, A, CH, DK, NL, F	PAL-/ SECAM-Tuner	48,25 - 855,25 MHz
US, Japan	NTSC-Tuner	48,25 - 855,25 MHz









Appendix C: Glossary










This glossary contains the most important concepts from the field of computer hardware, software and video.

Cross-references are marked by this symbol .








- Address** All memory positions in a computer have numbers (addresses). Through these addresses each memory position can be addressed. Some addresses are reserved for certain  hardware components and must not be used. If two hardware components use the same address, there is an address conflict.
- Active speakers** Active speakers have their own in-built amplifier and require their own power supply. Active speakers are mainly used to amplify the output signal of sound boards.
- ASCII** American Standards Committee of Information Interchange. ASCII character set ( Font): standard character set used by IBM and compatible computers. The ASCII character set consists of 256 characters, the first 128 of which are standardized.
- AUTOEXEC.BAT** A special DOS  batch file which is processed automatically after the computer has been started. The file contains among other things commands which load the country-specific keyboard driver ( Driver) or load programs automatically.
- AVI** Abbreviation for Audio Video Interleaved, standard format for digital video ( Video for Windows).
- Batch file** A  DOS file where a sequence of commands is processed one after the other.
- BIOS** Basic Input Output System. Number of basic input and output commands stored in a  ROM, PROM or EPROM. The  operating system uses these commands. The basic task of the BIOS is to control the data input and output. After starting the system the ROM BIOS performs some tests (checking the interfaces, the disk drives, etc.).
- Bit** Binary Digit. Smallest information unit in a computer. One bit can take on two states: “0” and “1”, two bits can take on $2^2=4$ states and three bits $2^3=8$, etc. In a computer those states are realized by “0 V” (no current = 0) and “5 V” (current = 1). To display a character (letter, number etc.), 8 bits = 1  byte are required.
- Bus** In a computer, the bus provides for the communication between the processor and the installed hardware (hard disk, graphics board, etc.).
- Byte** One byte consists of eight  bits. One byte represents exactly one character (letter, number etc.). The characters are binary-coded with “zero” (0) and “one” (1). The character “E” has the  ASCII code “01000101” or “45h” (hexadecimal).

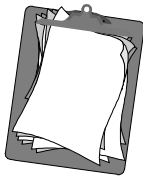
CD-ROM	CD-ROMs are mass storage media for digital data, such as 📖 digital video. CD-ROMs can only be read.
Clock frequency	Rate at which individual commands are processed in a processor. The higher the clock frequency, the quicker the commands are processed.
CLUT	C olor L ook U p T able. Color table which contains all indexed color values.
CODEC	Acronym for C ompressor/ D ecompressor, compresses (packs) and decompresses (unpacks) image data.
Color depth	Number of 📖 bits containing color information for each 📖 pixel. A color depth of 1 bit displays only black and white ($2^1=2$ colors). At a color depth of 8 bits $2^8=256$ colors are available and at 24 bits $2^{24}=16,777,216$ (📖 TrueColor) colors are available.
Composite video	Composite video encodes all image information in one signal.
CONFIG.SYS	A 📖 DOS configuration file which is processed automatically when the system starts. The CONFIG.SYS file includes 📖 drivers which control the output to the monitor and the keyboard and the mouse.
Data rate	Data per second, e.g. amount of data which a mass storage medium (hard disk or CD-ROM) saves/plays back per second or the amount of data of a video sequence per second.
Digital video	Digital video stores information bit by bit in a file (in contrast to analogous storage media).
DIP switch	D ual I ncline P ackage switch. A row of small switches designed to make
DirectDraw	Software interface developed by Microsoft for Windows which enables applications to access the graphics hardware.
DirectX	Direct (X) Extensions is a collection of several system extensions developed by Microsoft for Windows (among others 📖 DirectDraw, Direct3D), to enable video and games acceleration.
Dithering	Method to avoid extreme color contrasts, which occur with a reduced number of colors.
DMA	English abbreviation for D irect M emory A ccess. When the DMA is activated, large quantities of data, for instance video data can be transported particularly quickly.

DOS	Disk Operating System. The most common  operating system for PCs (Personal Computer). MS DOS is the M icrosoft version of DOS.
Driver	Programs which integrate the hardware (e.g. driver for a CD-ROM drive) in the computer and which adapt the software to the hardware (e.g. driver for a graphical user interface, such as Microsoft Windows). The software then uses the features of the graphics board.
DVD	Stands for D igital V ersatile D isk. An optical data carrier that uses special storage technology. Suitable for storing data and for digital video with data rates up to 7 MB/s in brilliant MPEG-2 quality.
Field	All common TV systems (NTSC, PAL, SECAM) use the following trick to avoid image flicker: Instead of creating a complete frame 30 (or 25 for PAL) times per second, half the lines are displayed at 60 (50) times a second and then the other half are woven in at 60 times per second in a process called interlace scanning. First, all odd lines (lines 1,3,5 etc.), then, all even lines (2,4,6 etc.) are drawn. The images consisting of either odd or even lines are called fields.
Font	Character set in a certain type, size and style, e.g. Times New Roman 11, normal; Times New Roman 11, italics; Times New Roman 11, bold; Times New Roman 11, bold, italics.
Frame	A single image in a video or animation sequence. If using full NTSC or PAL resolution, one frame consists of two interlaced fields.
Frame Rate	Image rate measured in frames per second when capturing and recording video clips.
Graphics board	Graphics boards are the “link” between the computer and the monitor. Without a graphics board no image appears on the screen. Graphics boards operate in two modes: the text mode and the graphics mode. In the text mode only  ASCII characters are displayed. The ASCII character set includes some simple “graphical” characters to display simple graphics. The graphics mode uses individual  pixels. The more pixels available (the higher the  resolution) the more detailed characters and graphics can be displayed.
Hardware	The hardware includes all computer components which are “hard”, such as the monitor, the hard disk, the keyboard, the mouse and the printer.
Interlaced	Image refreshing technique: the screen is subdivided into lines. When refreshing the image first all even lines and then all odd lines are refreshed.
KB	1 KB (Kilobyte) is equal to 1024  Bytes. Here “K” (kilo) is always equal to “1024”.
MBytes	1 MBytes (Megabyte) equals 1024  KB.

MPEG	Abbreviation for M otion P ictures E xperts G roup. Standard for the compression of moving images. A distinction is made between different formats depending upon the type of compression (e.g. MPEG-1, MPEG-2).
Non-interlaced	Image refresh method, where the complete image is generated without skipping lines. A non-interlaced image flickers much less than an  interlaced image.
NTSC	Abbreviation for N ational T elevision S ystem C ommittee. Color TV standard spread in the USA using 525 lines and 60 image fields per second.
Operating system	The operating system provides for the communication between  hardware,  software and the user. The tasks of the operating system are among others the file and the program management.
PAL	Abbreviation for P hase A lternation L ine. Color TV standard developed in Germany using 625 lines and 50 image fields per seconds.
Parallel interface	The parallel or Centronics interface transfers data through an 8-bit data line. This means that 8  bits (1  byte) can be transferred at a time. The transfer through the parallel interface is considerably faster than the transfer through the  serial interface, over long distances the parallel data transfer is, however, more susceptible to interference. Parallel interfaces are designated by LPT and a number (e.g. LPT1).
PIO	English abbreviation for P arallel I nput O utput. Denotes an integrated circuit (IC) used for inputting and outputting data in parallel.
Pixel	Picture element. Pixels are the smallest elements of a monitor image ( resolution).
Preview	The TV image appears on the monitor with the number of colors the graphics board supplies and possibly not in full size. See also  TV overlay.
RAM	R andom A ccess M emory. A RAM is a read-write memory component from which data can be read and to which data can be written any time. The computer memory is equipped with RAM components. The memory is a so-called “volatile” memory meaning that the memory contents are removed as soon as the computer is switched off.
Refresh rate	Also vertical scan rate. Number of image refreshes per second measured in Hertz (Hz). The higher the vertical scan rate the less flicker.
Resolution	Number of  horizontal and vertical pixels. 1408 x 1024 means that 1408 pixels are displayed horizontally and 1024 pixels are displayed on the monitor vertically. The higher the resolution the more details the monitor can display.
RGB	Abbreviation for R ed, G reen and B lue, the basic colors of additive color mixing. RGB describes the method used in computer technology where image information is transferred by dividing it into the three basic colors.

ROM	Read Only Memory. A ROM is a memory component which can only be read but which cannot be modified. The ROM's contents remain in the component also after the computer has been switched off. All functions which have to be available immediately after switching the computer on, e.g. the data for the system test, the character output on the screen, etc. are stored in ROM components. There are also PROMs (P rogrammable R OM) EPROMs (E rasable P ROM) and EEPROMs (E lectric E PROM).
Scaling	Adaptation of an image to a different size.
SECAM	Abbreviation for S équentiel C ouleur à M émoire. Color television system developed on the basis of the 📖 NTSC system operating with 625 lines and 50 image halves per second.
Serial interface	Also RS232. The serial interface transfers data through a data line bit by bit (all 📖 bits of a 📖 byte one after the other). The serial data transfer is considerably slower than the transfer through the 📖 parallel interface but it is less susceptible to interference. Serial interfaces are designated by COM and a number (e.g. COM1).
Software	General term for all programs a computer can run (system programs, application programs, 📖 drivers etc.) and files.
SVCD	Stands for “ S uper V ideo C ompact D isc”. A CD that holds about 35 minutes of video material and sound compressed in 📖 MPEG-2 format. The quality is dependent upon the compression rate and at the highest permissible 📖 data rate is somewhat worse than a 📖 DVD but better than that of 📖 VCDs or 📖 VHS.
S-VHS	Improved standard for home VCRs using S-Video signals to improve the color reproduction (📖 Y/C).
S-Video	With S-Video signals the brightness (luminance) and the color information (chrominance) are transferred separately.
TrueColor	16.7 million colors can be displayed at a time (📖 color depth).
TSR	English abbreviation for T erminate and S tay R esident. TSR programs are programs which perform certain operations after being started and install a certain part of the program in the memory. The memory resident part (which remains active) performs certain operations constantly in the background, such as scanning for viruses.
TV Overlay	Inserting the TV image into the image supplied by the graphics board: The TV image is supplied via the PCI bus, inserted into the image supplied by the graphics board, and displayed in a window. The playback will be without jerks and will not depend on the number of colors supplied by the graphics board. The quality of the TV overlay is better than the 📖 Preview.

Twain Driver	<p>TWAIN defines a standardized software interface for communication between graphics and/or capture programs and devices that supply graphical information. If the Twain Driver is installed, the capture function of the respective program can be used to load images directly from your video source into the graphics program.</p> <p>The Twain Driver only supports 32-bit programs and captures images in 24-bit mode.</p>
USB	<p>Acronym for Universal Serial Bus. A bus  which can support up to 127 peripheral devices in a daisy chain configuration including printers, digital cameras, keyboards and mice, and storage devices.</p>
VCD	<p>Stands for “Video Compact Disc”.</p> <p>A CD that holds up to 60 minutes of  MPEG-1 compressed video material and sound. It can be played on almost all DVD players and on all computers with a DVD or CD drive. The quality is approximately the same as  VHS.</p>
VHS	<p>Abbreviation for Video Home System. System commonly used for home VCRs to record and play back images and sound using ½“ tape. VH systems use  composite signals consisting of brightness and color information.</p>
Video-CD	<p>CD-ROM standard with  MPEG compressed videos. Can be played back using a suitable CD-ROM drive and MPEG decoder-card.</p>
Video decoder	<p>Converts analogous signals into digital information.</p>
Video encoder	<p>Converts digital information into analogous signals.</p>
Video for Windows	<p>Video for Windows is an extended system application for Microsoft Windows, with which it is possible to record, to store and to play back digital video sequences.  WDM.</p>
WDM	<p>English abbreviation for Windows Driver Model. Replaces  Video for Windows and is available from Windows 98 onward.</p>
Y/C	<p>Y/C is a signal consisting of two components: Y = Brightness information, C = Color information.</p>
YUV	<p>Color model where Y delivers the brightness information and U and V the color information.</p>



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